

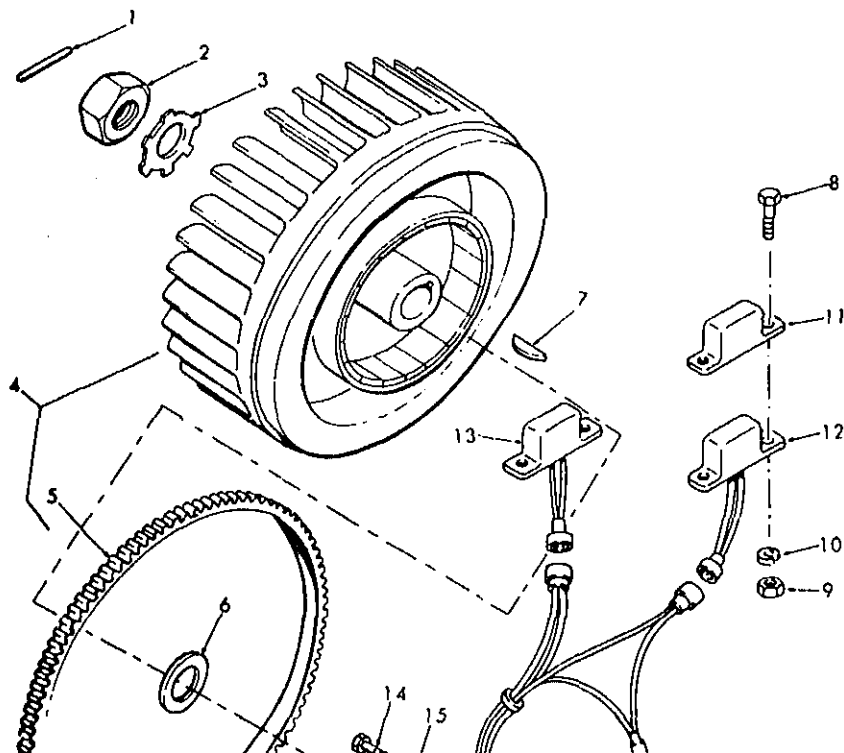
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HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C. 23 February 1972

**Direct and General Support Maintenance Manual
MIXER, CONCRETE; 4-WHEEL TRAILER MOUNTED; GED;
NON-TILT; 16 CU. FT. (T. L. SMITH MODEL 499A)
FSN 3895-444-1531**

TM 5-3895-342-34, 7 January 1972, is changed as follows:

Page 3-13. Figure 3-8.1 is added as follows:



Page 4-2. Paragraph 4-2d is superseded as follows:

d. *Assembly.* Assemble water gage in reverse procedure of removal. Insure that gib key is properly aligned when reassembling handle and shaft to tank lever.

Page 9-3. Paragraph 9-3a is changed as follows:

a. Remove and disassemble towing stub * * * figure 9-2.

Paragraph 9-5 is added as follows:

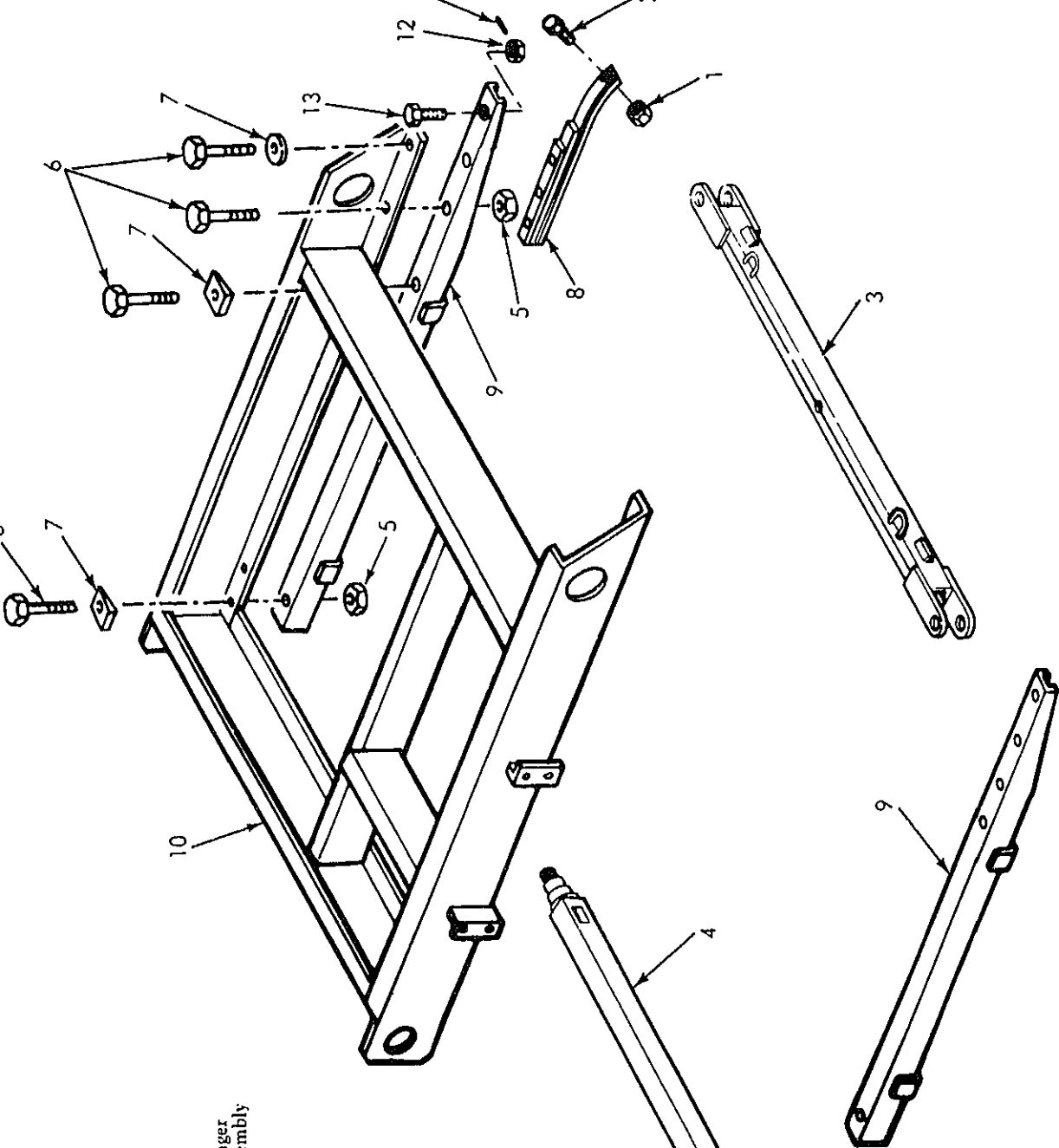
(1) Jack up mixer. Support mixer with
able timbers.

(2) Remove locknuts (1) and capscrews
that secure axle to springs (8). Move axle
from springs.

(3) Remove wheel assemblies from
(para 9-2).

(4) Disassemble towing stub and fifth wheel
assembly from front axle is required (para 9-2).

b. *Assembly.* Assemble axle in reverse
removal procedure a above.



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mbly

mixer with suitable timbers.

(2) Remove nuts (5) (fig. 9-4), capscrews (6) and washers (7) that secure frame (10) to spring hangers (9).

(3) Remove rear axle (para 9-4).

(4) Pull front axle with spring hangers from beneath mixer.

(6) Remove Roll pins (11) from nuts and unscrew leveling screws (13) from hanger (9).

(7) To remove frame assembly (10) necessary that mixer be supported from over sling in order for frame to be lowered away from mixer when attaching hardware is removed.

By Order of the Secretary of the Army:

Official:

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Major General, United States Army

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Distribution:

To be distributed in accordance with DA Form 12-25B, (qty rqr block no. 431) Direct and General Support maintenance requirements for Mixer, Concrete.

DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL
MIXER, CONCRETE, 4 WHEEL TRAILER MOUNTED,
GASOLINE ENGINE DRIVEN, NON TILT, 16 CU. FT.
(T. L. SMITH COMPANY MODEL 499A)

FSN 3895-444-1531

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Section I. GENERAL

1-1. Scope.

a. This manual contains instructions for the use of direct and general support maintenance personnel maintaining the T. L. Smith Concrete Mixer as allocated by the Maintenance Allocation Chart. It provides information on the maintenance of the equipment which is beyond the scope of the tools, equipment, personnel, or supplies normally available to using organizations.

b. Appendix A contains a list of publications applicable to this manual.

1-2. Maintenance Forms and Records

DA forms and procedures used for equipment

maintenance will be only those prescribed by TM 38-750, The Army Maintenance Management System.

1-3. Reporting of Errors

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commanding General, U. S. Army Mobility Equipment Command, ATTN: AMSME-MP, 4300 Goodfellow Blvd., St. Louis, Mo. 63120.

Section II. DESCRIPTION AND TABULATED DATA

1-4. Description

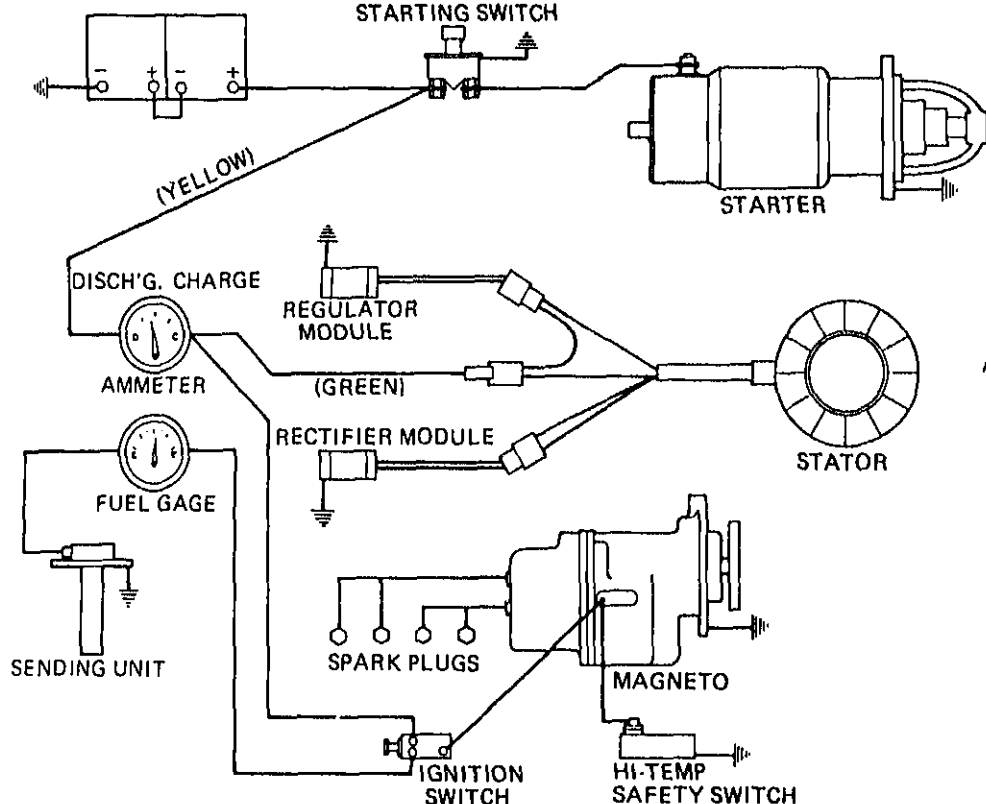
A general description of the T. L. Smith Concrete Mixer is contained in TM 5-3895-342-12.

1-5. Differences Between Models

This manual covers only the T. L. Smith Concrete Mixer, Model 499A. No differences exist within the serial number range covered in this manual. The serial number range covered in this manual is: 6900 to 77058

1-6. Tabulated Data

a. *General.* Data as to manufacturer and model identification of components is contained in TM 5-3895-342-12. This paragraph contains maintenance data pertinent to direct and general maintenance personnel. A wiring diagram (fig. 1) is also included.



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Figure 1-1. Wiring diagram.

b. Engine Repair and Rebuild Standard. Table 1-1 lists manufacturer's sizes, tolerances and maximum allowable wear and clearances.

c. Nut and Bolt Torque Data. Table 1-2 provides nut and bolt torque data.

Table 1-1. Engine Repair and Rebuild Data

Component	Manufacturer's dimensions and tolerances in inches		Desired clearance		Maximum allowable wear and clearance
	Minimum	Maximum	Minimum	Maximum	
Camshaft					
No. 1 Journal	1.8725	1.8730			0.002
No. 2 Journal	1.2475	1.2480			0.002

Component	Manufacturer's dimensions and tolerances in inches		Desired clearance		Maximum allowable wear and clearance
	Minimum	Maximum	Minimum	Maximum	
Connecting Rod—Continued					
Clearance between piston pin and bushing			0.0005	0.0010	0.0005
Allowable twist of connecting rod measured 3 inches from end	0.002				
Crankshaft					
Connecting rod journal diameter	1.8100	1.8105			0.002
Main journal fillet radius		0.125			
Conrod journal fillet radius		0.09375			
End play of crankshaft in bearing			0.002	0.004	adjust
Cylinders					
Nominal dimension of bore diameter	3.254	3.255			0.005
Governor					
Diameter of drive gear shaft	0.4270	0.4275			0.002
Id of drive gear shaft bushing	0.4290	0.4295			0.002
Clearance between shaft end bushing	0.0015	0.0025			
Id of fulcrum bore in housing	0.312	0.313			0.002
Fulcrum of shaft diameter	0.309	0.310			0.002
Clearance of shaft in housing bore	0.002	0.004			
Od of flyweight spool bushing	0.560	0.0561			0.002
Id of flyweight spool	0.563	0.565			0.003
Clearance between spool bushing	0.002	0.005			
Idler Gear					
Diameter of idler gear shaft	0.7490	0.7495			0.002
Diameter of shaft bore in gear	0.7510	0.7515			0.002
Clearance of gear bore to shaft			0.001	0.0025	
Backlash of idler gear			0.002	0.004	
Oil pump					
Drive shaft diameter	0.4995	0.5000			0.002
Diameter of shaft bore in pump body	0.5005	0.5015			0.002
Clearance bore to shaft			0.0005	0.0030	
Driven gear stub shaft diameter	0.4995	0.5000			0.002
Diameter of bore in driven gear	0.5005	0.5015			0.002
Piston					
Allowable wear from diameter of skirt					0.005
Clearance skirt to cylinder bore			0.0045	0.0050	
Diameter of piston pin bore	0.8593	0.8596			0.0005
Clearance piston pin to piston			0.0000	0.0005	
Diameter of piston pin	0.8591	0.8593			0.001
Piston ring					
Gap clearance (fitted in cylinder)			0.010	0.020	0.015
Clearance of ring in piston groove:					
Groove No. 1			0.002	0.0035	0.002
Groove No. 2			0.0015	0.0025	0.002
Groove No. 3			0.001	0.003	0.002
Valve lifters					
Diameter of guide holes in block	0.6245	0.6255			0.002
Clearance of lifter to hole			0.0005	0.0025	

Spark plugs 25-30 ft-lb (foot-pound) (s)
Cylinder head capscrews 22-24 ft-lb
Gear vocer capscrews 14-18 ft-lb
Oil pan capscrews 6-9 ft-lb

Connecting rod nuts 22-24 ft-lb
Cylinder block nuts 40-50 ft-lb
Main bearing plate capscrews 25-30 ft-lb
Pal locknut ¼ turn past finger

DIRECT SUPPORT AND GENERAL SUPORT

MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

2-1. Tools and Equipment

Tools and equipment issued with or authorized for the concrete mixer are listed in the Basic Issue Items list, TM 5-3895-342-12.

2-2. Special Tools and Equipment

There are no special tools or equipment required to

perform direct and general support maintenance on the mixer.

2-3. Maintenance Repair Parts

Maintenance repair parts are listed and illustrated in TM 5-3895-342-34P (when printed).

Section II. TROUBLESHOOTING

2-4. General.

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the concrete mixer and its components. Malfunctions which may occur are listed in table 2-

1. A list of probable causes is described opposite each malfunction. The corrective action recommended is described opposite the probable cause.

2-5. Troubleshooting

Refer to table 2-1 for troubleshooting information.

Table 2-1. Troubleshooting

Malfunction	Probable Cause	Corrective Action
1. Starting motor will not crank engine.	a. Defective starting motor.	a. Repair starting motor (para 3-1).
2. Engine fails to start or is hard to start.	b. Low or dead battery.	b. Replace or recharge battery.
	a. Defective magneto.	a. Repair magneto (para 3-4).
	b. Engine valves burned.	b. Repair or replace valves (para 3-11).
	c. Dirty or faulty carburetor.	c. Clean and replace carburetor (para 3-3).
	d. Dirty fuel tank and fuel	d. Drain fuel tank and service with clean fuel.
3. Engine stops.	a. Magneto defective.	a. Repair magneto (para 3-4).
	b. Engine damaged by overheating or lack of lubrication.	b. Repair the engine (chap 3).
	c. Broken crankshaft.	c. Replace crankshaft (para 3-1).
	d. Broken camshaft.	d. Replace camshaft (para 3-18).
4. Engine noisy.	a. Worn piston pins or pistons.	a. Replace pistons or piston pins (para 3-16).
	b. Connecting rods and main bearings loose.	b. Replace connecting rod, upper and lower bearing halves (para 3-1).

Malfunction	Probable Cause	Corrective Action
	b. Governor defective. c. Piston rings defective.	b. Repair governor (para 3-16). c. Replace pistons and rings (para 3-16).
7. Engine has low or no oil pressure.	d. Defective magneto. e. Clogged or dirty air cleaner.	d. Repair magneto (para 3-16). e. Disassemble and clean (para 3-16).
8. Engine oil consumption high.	a. Defective oil pump. b. Main and connecting rod bearing worn.	a. Repair oil pump (para 3-16). b. Replace main and connecting rod bearings (para 3-16).
9. Master clutch slips or chatters.	a. Piston rings worn. b. Cylinder bore scored.	a. Replace piston rings (para 3-16). b. Rebore or replace (para 3-19).
10. Ammeter will not indicate in green range.	Defective clutch. Defective flywheel alternator.	Repair clutch (para 3-7). Check flywheel alternator (para 3-7). Repair or replace flywheel alternator (para 3-7).

Section III. GENERAL MAINTENANCE

2-6. General

This section contains general maintenance information that would otherwise have to be repeated throughout this manual.

2-7. Maintenance

a. Hardware and Threaded Parts. Inspect hardware for damaged threads, rounded corners and damaged slots. Threaded holes and parts should accept their mating parts without requiring excessive torque. Threads may be chased with a tap or die. Replace any threaded parts which cannot be repaired.

b. Gaskets. Replace all gaskets which are disturbed during repair operations or which show signs of leakage. Use grease or gasket cement to hold the gasket in position during installation.

c. Oil Seals and Packings. Thoroughly lubricate the sealing lip of spring-loaded seals when installing. Apply a non-hardening sealant to the outer circumference of encased seals or to the mating bores to prevent leakage. Immerse preformed packings in the fluid which they will contact.

bearings that are scored, pitted, discolored, overheating, or otherwise damaged. Install bearings against shoulders, but the chamfered side is toward the shoulder. Press the bearing and its mating surface with the bearing only on the race adjacent to the mating part. Use drivers which contact the race as possible.

e. Repair of Damaged Machined and Polished Surfaces. Remove rough spots, scoring, galling, gouges and other surface damage. Grind to original finish. Use fine sand stone, crocus or emery cloth, file or other fine abrasive. The finish of the part must approximate that of a new part. Critical dimensions must not be beyond acceptable limits. Build up shafts and other worn parts by neutralizing, chrome plating or welding. Grind to the original size.

f. Welding. Welding must be performed by a qualified welder. Insure that welds show complete fusion and penetration and conform to governing specifications. Inspect all welds.

8. Clutch Housing Assembly

a. Removal.

(1) Remove pump belt and drive hoist belts as instructed in TM 5-3895-342-12.

(2) Remove motor sheave.

(3) Remove oil level plug and drain oil from housing.

(4) Remove four nuts and the lockwashers securing clutch housing to engine and remove housing and gasket.

b. Installation. Install clutch housing assembly in reverse of instructions in subparagraph a above.

9. Engine Assembly

a. Removal.

(1) Remove pump belt and hoist drive belts as instructed in TM 5-3895-342-12.

(2) Remove fuel tank as instructed in TM 5-3895-342-12.

(3) Disconnect battery cable from start switch in engine.

(4) Disconnect engine ground wire from backing.

(5) Remove four bolts, nuts and lockwashers securing engine spacer plates to deck.

(6) Lift engine assembly off mixer with suitable lifting device.

b. Installation. Install engine assembly in reverse of instructions in subparagraph a above.

10. Water Tank

a. Removal.

(1) Drain all water from tank.

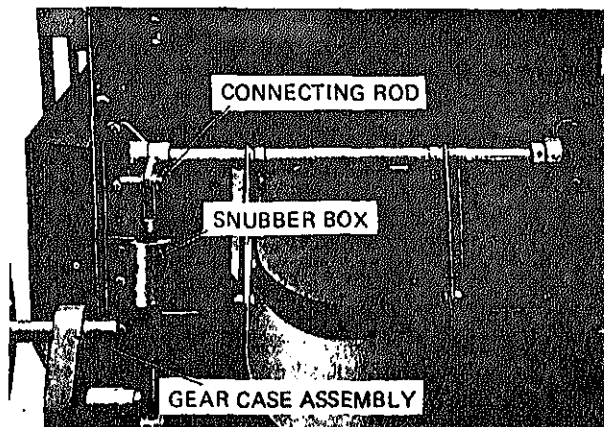
(2) Disconnect hose at tank.

(3) Remove four bolts, nuts and lockwashers securing tank to support angles. Lift tank off mixer.

b. Installation. Install water tank in reverse of instructions in subparagraph a above.

11. Discharge Spout Assembly

a. Removal. Remove discharge spout as in-



1. REMOVE TWO COTTER PINS AND PULL PIN OUT OF CONNECTING ROD.
2. REMOVE TWO BOLTS, NUTS AND LOCKWASHERS FROM BEARING ON BACK END OF SHAFT, AND REMOVE BEARINGS, SHAFT AND SPOUT.
3. REMOVE TWO BOLTS, NUTS AND LOCKWASHERS HOLDING SNUBBER BOX TO FRAME.
4. REMOVE THREE BOLTS, NUTS AND LOCKWASHERS HOLDING GEAR CASE ASSEMBLY TO FRAME AND REMOVE HANDWHEEL AND GEARCASE ASSEMBLY AND CONNECTING ROD.

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Figure 2-1. Discharge spout assembly removal.

b. Installation. Install discharge spout assembly in reverse of instructions in figure 2-1.

2-12. Skip

a. Removal.

(1) Lower skip to ground.

(2) Disconnect cable from left hand winding drum and pull cable free of skip.

(3) Disconnect vibrator cable from underside of skip.

(4) Remove two bolts, nuts and lockwashers holding skip pillowblocks to mixer and remove skip and pillowblocks.

b. Installation. Install skip in reverse of instructions in subparagraph a above.

2-13. Skip Vibrator Assembly

b. *Installation.* Install skip vibrator assembly in reverse of instructions in subparagraph a above.

14. Drive and Hoist Assembly

a. *Removal.*

- (1) Remove skip vibrator assembly (para 2-2).
- (2) Remove hoist cable (TM 5-3895-342-12).
- (3) Remove engine (para 2-9).
- (4) Remove battery box (TM 5-3895-342-12).
- (5) Remove remaining two bolts, nuts and lockwashers securing side support to deck.
- (6) Remove two bolts, nuts and lockwashers holding bottom of side support to lower frame.
- (7) Remove two nuts and washers securing side support to left upright.
- (8) Remove two bolts, nuts and lockwashers securing pillowblock on each end of drive and hoist assembly to frame.
- (9) Remove bottom nut from tension rod and lift rod out of frame.
- (10) Remove cotter pin from back side of skip clutch shifter yoke, remove cotter pin from yoke rod at frame end, slide rod out and remove yoke.
- (11) Remove nut and washer securing brake hold-down rod to frame.
- (12) Remove cotter pin from rod holding brake band to brake linkage and disengage rod from linkage.
- (13) Lift drive and hoist assembly out of mixer with suitable lifting device.

b. *Installation.* Install drive and hoist assembly in reverse of instructions in subparagraph a above.

15. Reduction Gear Case Assembly

a. *Removal.*

- (1) Remove drive and hoist assembly (para 2-1).

drain.

(6) Remove eight bolts, nuts and lockwashers holding cover to case and remove case and gasket.

b. *Installation.* Install reduction gear case assembly in reverse of instructions in subparagraph a above.

2-16. Drum

a. *Removal.*

- (1) Lower skip to the ground.
 - (2) Remove discharge spout assembly (para 2-11).
 - (3) Remove eight bolts, nuts and lockwashers holding ladder to frame and remove ladder.
 - (4) Remove eight bolts, nuts and lockwashers holding right guard to frame and remove guard.
 - (5) Remove four bolts, nuts and lockwashers holding left guard to frame and remove guard.
 - (6) Remove four bolts, nuts and lockwashers holding each rear upright to the upper frame.
 - (7) Remove two bolts, nuts and lockwashers holding each front upright to upper frame.
 - (8) Disconnect hose from pump to upper frame at upper frame end.
 - (9) Disconnect hose from three-way valve to drum at three-way valve end.
 - (10) Provide sufficient slack in skip cable to permit lifting water tank and upper frame off mixer setting it to one side of mixer.
 - (11) Remove section of water pipe that protrudes into drum.
 - (12) Use suitable lifting device to hoist drum out of mixer.
- b. *Installation.* Install drum in reverse of instructions in subparagraph a above.

REPAIR OF ENGINE

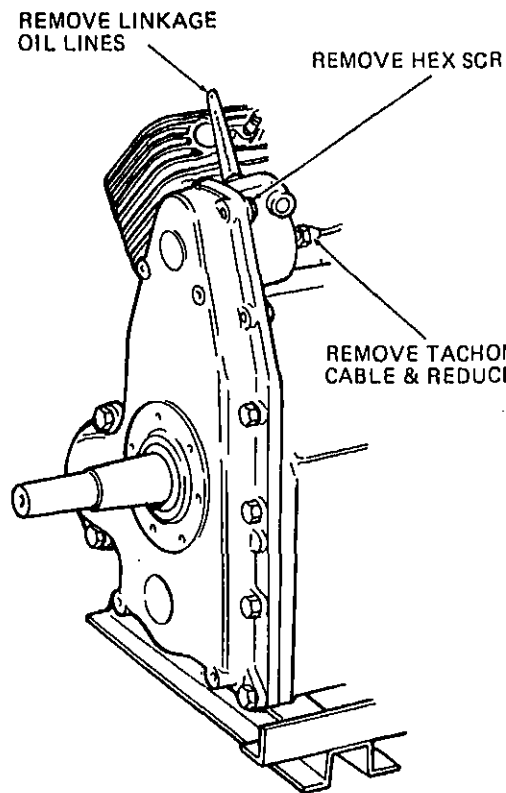
Section 1. ENGINE ACCESSORIES

3-1. General

This section provides information on the maintenance of those items which are considered accessories to the engine. They consist of the governor, carburetor, magneto and starting motor.

3-2. Governor

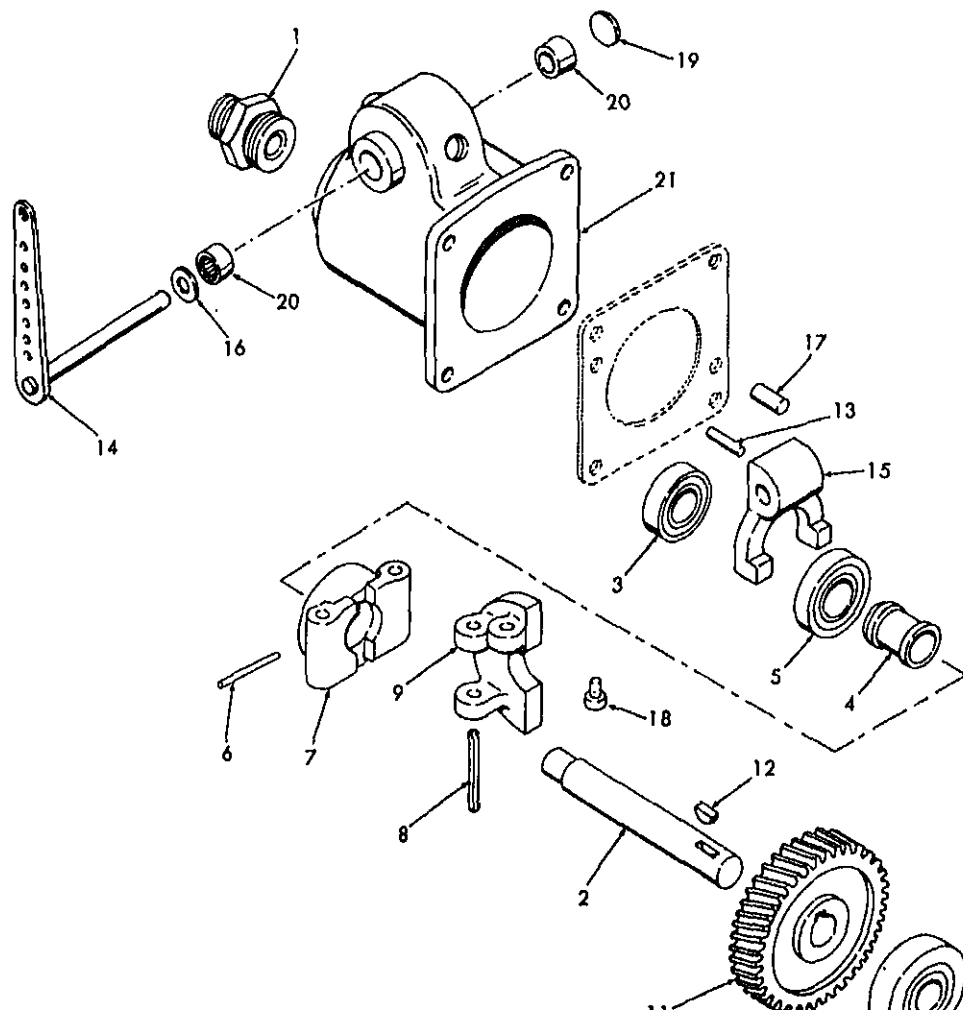
- a. *Removal.* Remove the governor (fig. 3-1).



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Figure 3-1. Governor removal.

b. *Disassembly.* Disassemble the governor in the numerical sequence shown in figure 3-2.



parts in this position, screw the ball joint onto the control rod until the right angle stud on the ball joint fitting registers with the hole in the lever, then screw fitting in two more turns.

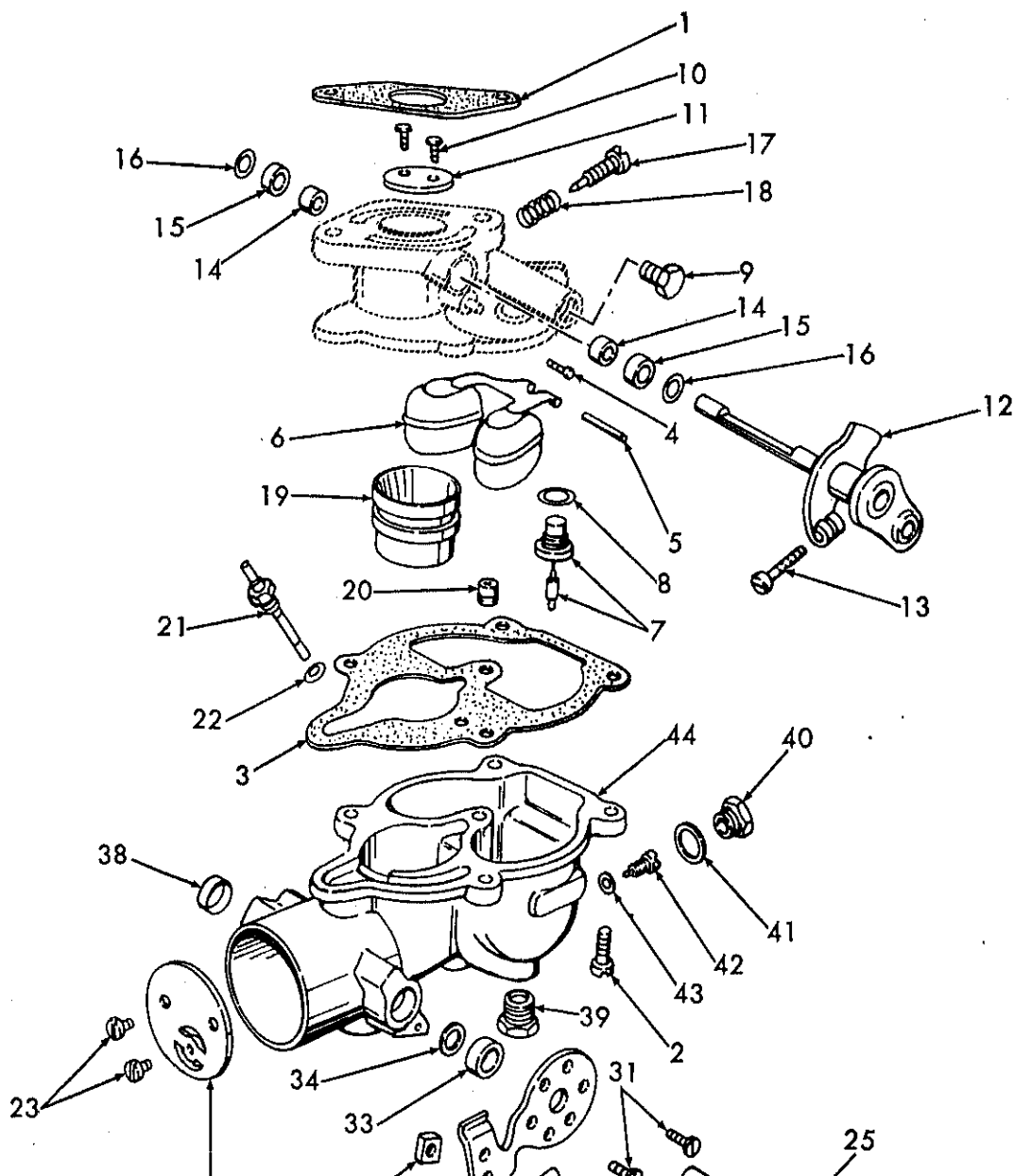
(2) Insert ball joint stud into the hole in governor lever, assemble and tighten locknuts. With the governor lever pushed toward the carburetor as far as it will go, there should be a $1/16$ inch clearance between the throttle lever and the stop pin on the carburetor.

the fifth hole (from the bottom) in the governor lever and adjust the spring tension by means of adjusting screw connected to the spring to run revolutions per minute without load. The speed at full load will then be approximately 1500 revolutions per minute.

3.3. Carburetor

a. *Removal.* Remove the carburetor (TOMCAT 3895-342-12).

b. Disassembly. Disassemble the carburetor in numerical sequence as illustrated in figure 3-3.



1. Gasket
2. Screw
3. Gasket
4. Jet, idle
5. Axle, float
6. Float and hinge ay
7. Valve and seat: fuel
8. Washer
9. Plug, $\frac{1}{8}$ in.
10. Screw and washer
11. Plate, throttle
12. Shift and stop lever
13. Screw
14. Bushing
15. Seal
16. Retainer
17. Needle: idle adj
18. Spring
19. Venturi
20. Jet, well vent
21. Jet, discharge
22. Washer, fiber

23. Screw and washer
24. Plate, choke
25. Shaft, choke
26. Nut
27. Lockwasher
28. Spring
29. Screw
30. Lever, choke
31. Screw
32. Bracket, choke
33. Retainer
34. Seal
35. Nut
36. Screw
37. Clip
38. Plug
39. Plug
40. Plug
41. Washer, fiber
42. Jet, main
43. Washer, fiber
44. Bowl, fuel

c. Cleaning, Inspection and Repair.

(1) Clean all parts with cleaning solvent.

(2) Inspect all parts for wear or damage.

Repair or replace worn or damaged parts.

d. Reassembly. Reassemble the carburetor reverse of numerical sequence as illustrated figure 3-3.

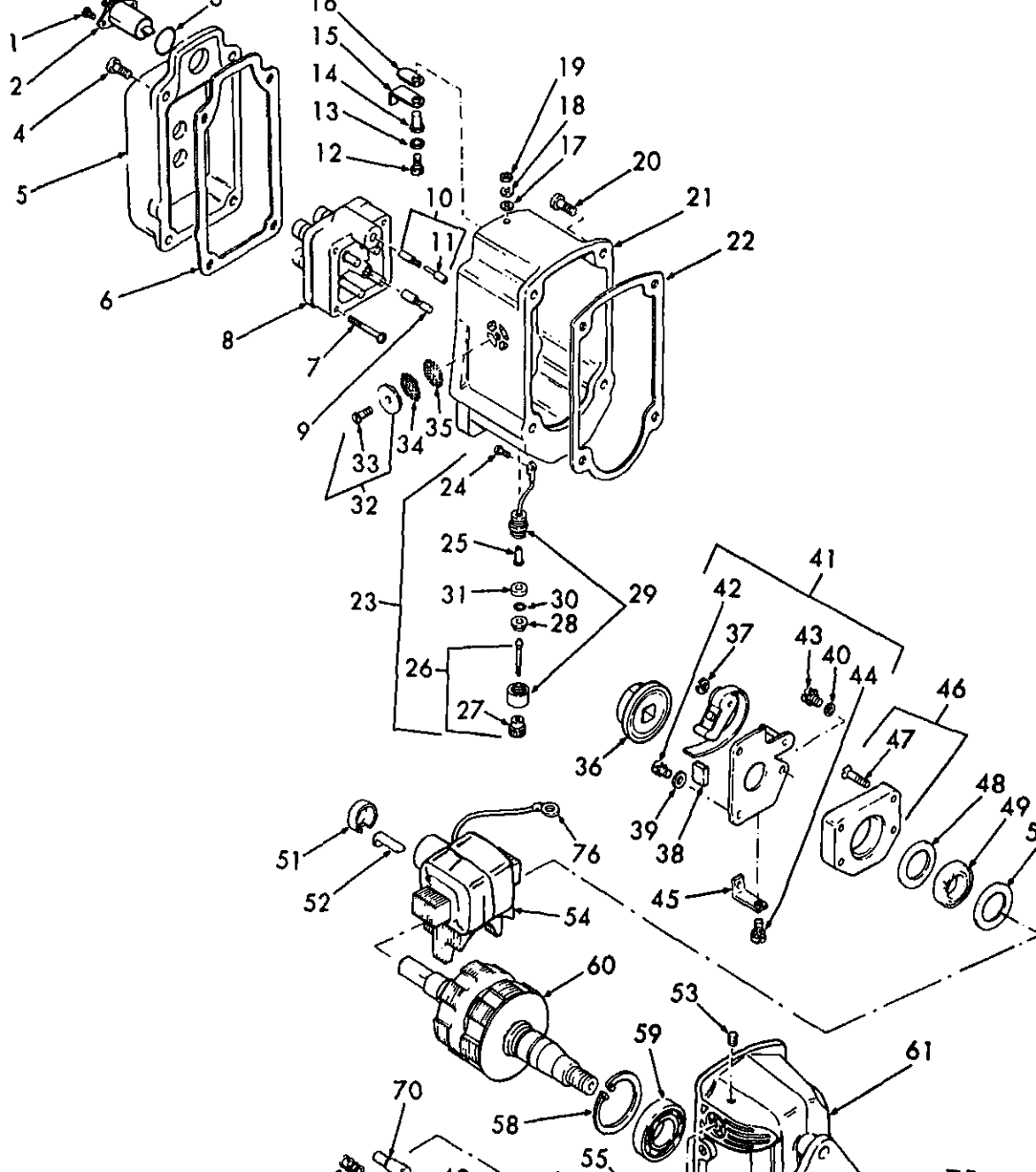
e. Installation. Install the carburetor (TM 3895-342-12).

f. Adjustment. Adjust the carburetor (TM 3895-342-12).

3-4. Magneto

a. Removal. Remove the magneto (TM 5-3895-342-12).

b. Disassembly. Disassemble the magneto reverse of numerical sequence as illustrated in figure 3-4.



7. Screw, 8-32 x $\frac{1}{2}$ in.
8. Block, Distributer
9. Brush & Spring Assembly
10. Rod, High Tension Lead
11. Tube, Suppressor
12. Screw, 6-32 X $\frac{1}{2}$ in.
13. Washer, Flat No. 6
14. Bushing
15. Contact, Condenser
16. Guide
17. Washer, Flat No. 6
18. Washer, Lock, No. 6
19. Nut, 6-32
20. Screw, Cap, 10-24 x $\frac{5}{8}$ in.
21. End Cap Assembly
22. Gasket, End Cap
23. Switch, Ground
24. Screw, Hex, 6-32 x $\frac{1}{4}$ in.

33. Screw, 6-32 x $\frac{3}{8}$ in.
34. Mesh, Copper
35. Screen, Vent'
36. Rotor, Distributor
37. Pin, Lock
38. Wick and Holder
39. Washer, Lock, No. 6
40. Washer, Lock, No. 6
41. Breaker Arm
42. Screw w / Washer 8-32 x $\frac{3}{8}$ in.
43. Screw w / Washer
44. Screw, 6-32 x $\frac{3}{8}$ in.
45. Clip
46. Support, Bearing
47. Screw, Hex, 8-32 x $\frac{3}{8}$ In.
48. Washer, Flat
49. Bearing
50. Washer, flat

59. Bearing
60. Rotor, magnetic
61. Frame and Vent Assembly
62. Bushing
63. Washer
64. Impulse coupling
65. Shell
66. Spring
67. Hub
68. Spring
69. Key
70. Pin
71. Pin
72. Washer
73. Seal
74. Washer
75. Ring, snap
76. Wire, Ground Assembly

Note. The housing around the bearing race must be heated to 240 to 250 degrees fahrenheit before removing or installing the bearing.

c. Cleaning, Inspection and Repair.

(1) Clean the condensor and lead wire and coil lead wire with a dry cloth. Clean all other parts with a cleaning solvent.

(2) Inspect all parts for wear or damage. Repair or replace worn or damaged parts.

(3) Test the condensor for open circuit on a reliable condensor tester. The capacity of the condensor is 0.17 to 0.21 mfd (microfarad).

(4) Test the coil on a reliable tester. The primary draw current of the coil must be 1.6 amperes.

d. Reassembly. Reassemble the magneto reverse of the numerical sequence as illustrated in figure 3-4.

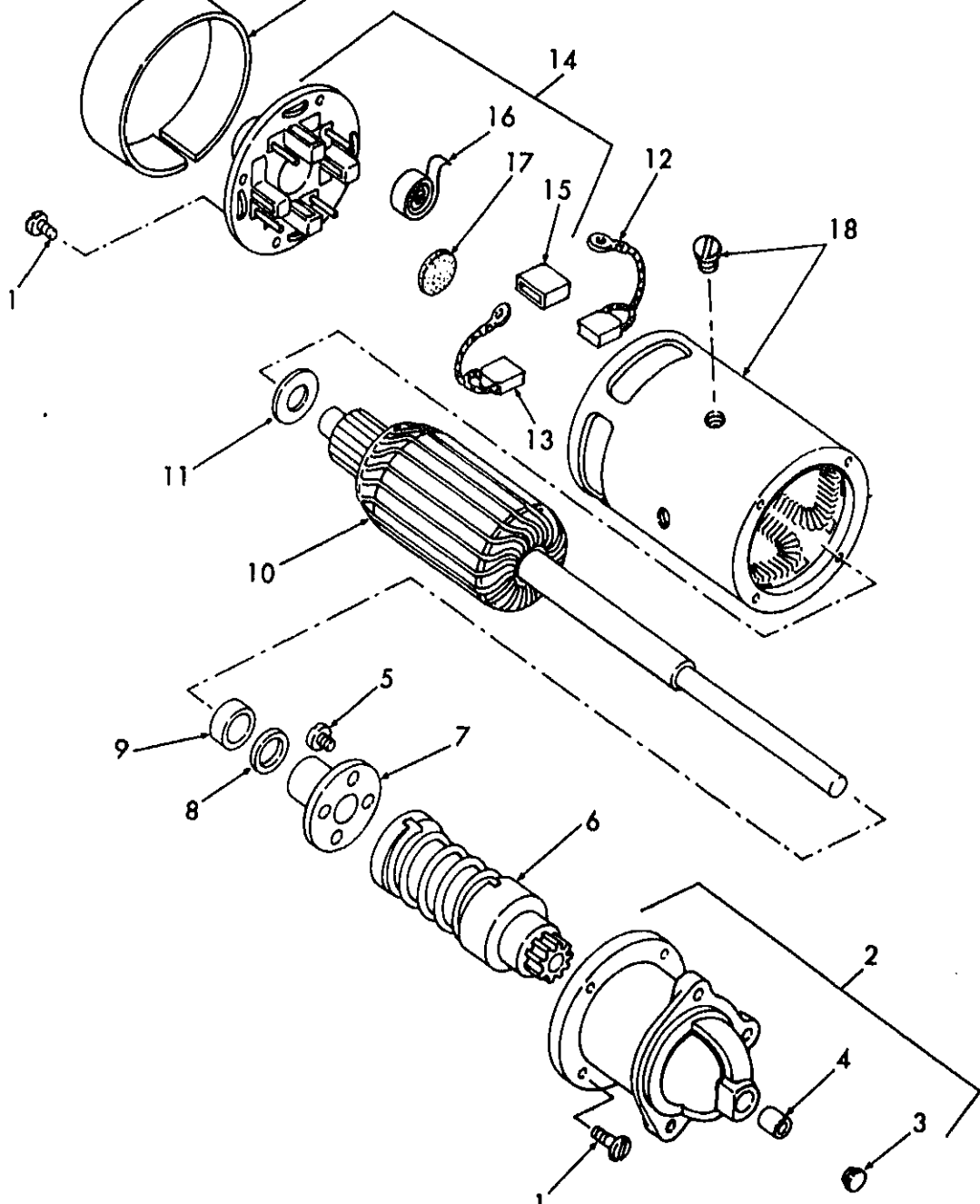
Note. The proper clearance between the contact surface and the point on the breaker arm is 0.015 inch.

e. Installation. Install the magneto (TM 3895-342-12).

3-5. Starting Motor

a. Removal. Remove starting motor (TM 3895-342-12).

b. Disassembly. Disassemble the starting motor in numerical sequence as illustrated in figure



they can be assembled in the same position.

Note. Due to the method of installing field coils in this unit, it is necessary that the complete frame and field assembly be replaced if field coils are required.

c. Cleaning, Inspection and Repair.

(1) Clean all parts with a cleaning solvent.

(2) Inspect all parts for wear and damage.

(3) Test the armature on a growler for shorts, open circuits, and grounds. Replace a defective armature.

(4) Test the field coils with a multimeter for continuity and ground. Replace a defective field coil. Use a multimeter and test for continuity between the insulated brush holder and the

replaced.

(5) Replace worn or damaged parts.

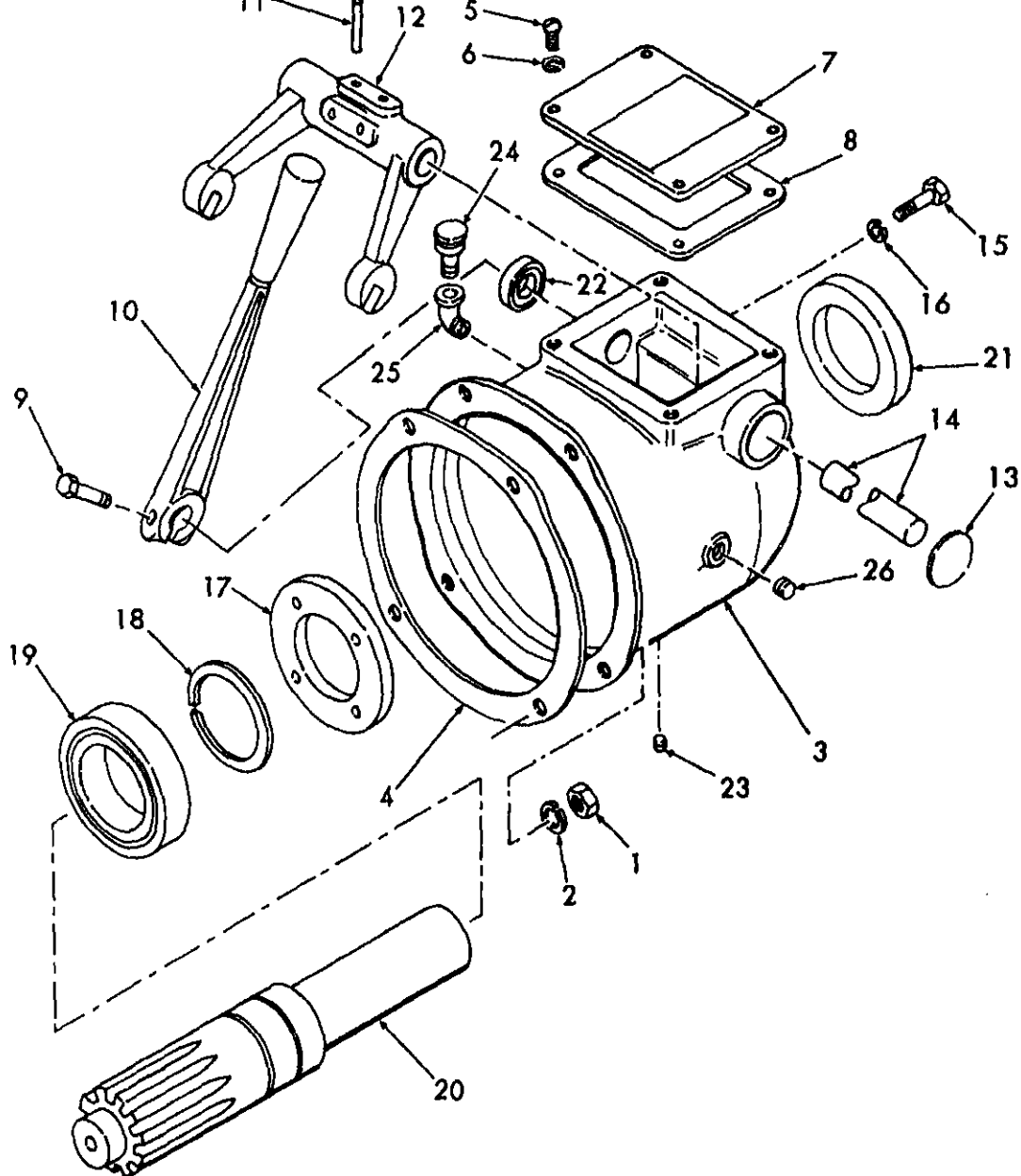
d. Reassembly. Reassemble the starting motor in reverse of numerical sequence as illustrated in figure 3-5.

e. Installation. Install the starting motor (part number 3895-342-12).

3-6. Clutch Housing Assembly

a. Removal. Remove the clutch housing assembly (para 2-8).

b. Disassembly. Disassemble the clutch housing assembly in numerical sequence as illustrated in figure 3-6.



(2) Inspect all parts for wear or damage. Repair or replace worn or damaged parts.

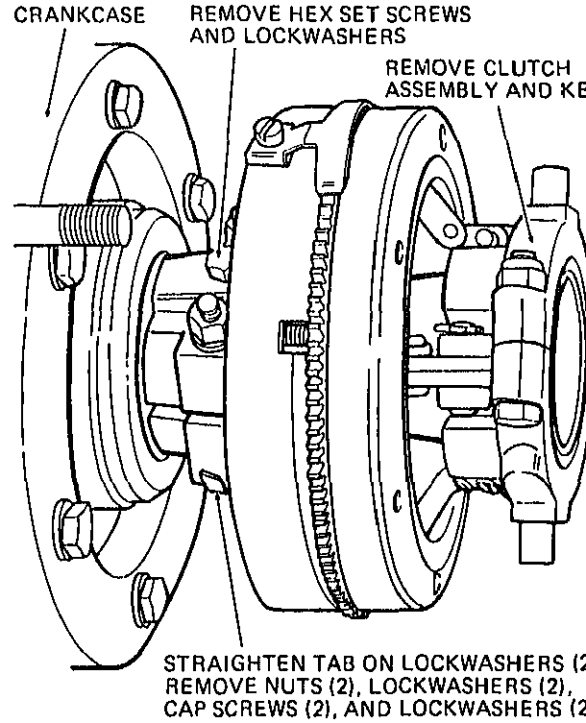
Reassembly. Reassemble the clutch housing assembly in reverse of numerical sequence as illustrated in figure 3-6.

Installation. Install clutch housing assembly (para 2-8).

Clutch Assembly

Removal.

- (1) Remove the clutch housing assembly (para 2-8).
- (2) Remove the clutch assembly as illustrated in figure 3-7.



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Figure 3-7. Clutch assembly removal.

- (1) Clean all parts with a cleaning solvent.
- (2) Inspect all parts for wear and damage. Repair or replace worn or damaged parts.
- d. *Reassembly.* Reassemble the clutch assembly

figure 3-8.

e. *Installation.* Install the clutch assembly reverse of the instructions in subparagraph a above.

f. *Adjustment.* Adjust the clutch assembly (TM 5-3895-342-12).

Section II. ENGINE COMPONENTS

3-8. General

This section provides information on the maintenance of those items which are considered engine components. They consist of the flywheel alternator, cylinder heads, timing gears, oil pump, connection rod and piston assemblies, crankshaft assembly, camshaft and valve lifters, and cylinder locks and crankcase.

3-9. Flywheel Alternator

a. *Removal.*

- (1) Remove the flywheel (TM 5-3895-342-12).
- (2) Disconnect the 14 gage green wire from the charge side of the ammeter.
- (3) Disconnect the rectifier module leads at the terminal block plug and receptacle. Remove the two screws, nuts and lockwashers securing the rectifier module to the engine.
- (4) Disconnect the regulator module leads at the terminal block plug and receptacle. Remove the two screws, nuts and lockwashers securing the regulator module shield and regulator module to the engine.
- (5) Remove the two roll pins and four screws and lockwashers securing the stator to the engine.
- b. *Cleaning, Inspection and Repair.*
- (1) Wipe all parts with a clean dry rag.

(2) To check stator, rectifier module and regulator module, refer to table 3-1. Replace defective components.

c. *Installation.* Install the flywheel alternator reverse of the instructions in subparagraph a above.

CAUTION: The following are precautions to be exercised in the use of this flywheel alternator.

- (1) Do not reverse battery connections. This is for a negative ground system only.
- (2) Connect booster batteries properly-positive to positive and negative to negative.
- (3) Do not polarize the alternator.
- (4) Do not ground any wire from stator modules which terminate at connectors.
- (5) Do not operate engine with battery disconnected from system.
- (6) Disconnect at least one battery lead if fast battery charger is used.
- (7) Never use a fast battery charger to boost the battery output.

3-10. Cylinder Heads

a. *Removal.*

- (1) Remove cylinder air shrouds (TM 5-3895-342-12).
- (2) Remove spark plugs (TM 5-3895-342-12).

Table 3-1. Flywheel Alternator Check

METER PROBE CONNECTIONS	CORRECT METER VALUE	REPLACE STATOR
—	R X 1 SCALE	
Black # 1 to Black # 2	1.00 ohms	0 indicates Short Circuit.
Black # 1 to CT	.50 ohm	00 indicates Open Circuit
Black # 2 to CT	.50 ohm	
Black # 1 to Red	2.75 ohms	
Black # 2 to Red	1.75 ohm	
Any Pin to Engine Ground	00	Any reading indicates a short circuit.

TO CHECK RECTIFIER MODULE

The rectifier module can be distinguished from the regulator by the two black lead wires and identification decal. Use an ohmmeter and static check continuity as follows:

METER PROBE CONNECTIONS	CORRECT METER VALUE	REPLACE RECTIFIER MODULE
—	R X 1 SCALE	
Eng. Gnd. to Black #1	5 to 15 ohms	Any reading indicates a short circuit
Black # 1 to Eng. Gnd.	00	
Eng. Gnd. to Black #2	5 to 15 ohms	
Black # 2 to Eng. Gnd.	00	

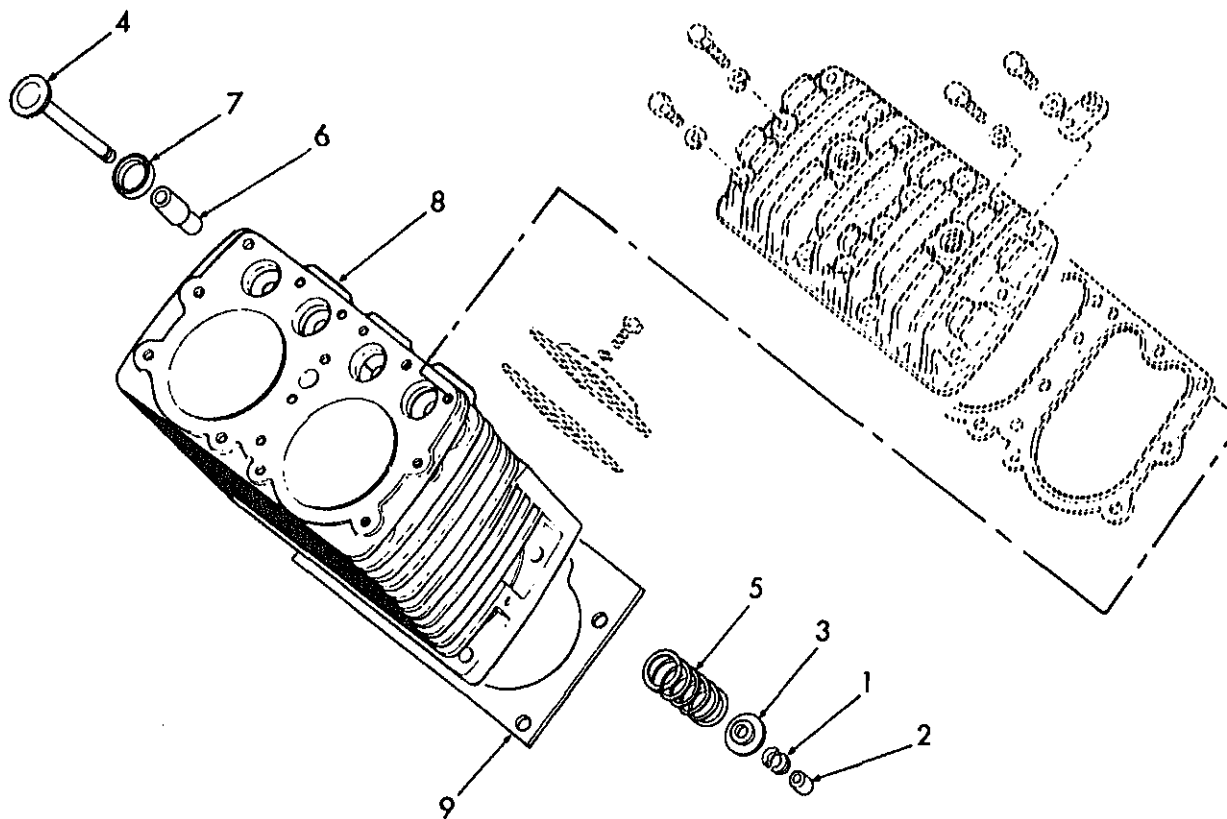
TO CHECK REGULATOR MODULE

The regulator module can be distinguished from the rectifier module by the lead wire colors, black and red, and the identification decal. Use a good ohmmeter and static check continuity as follows:

METER PROBE CONNECTIONS	CORRECT METER VALUE	REPLACE REGULATOR MODULE
—	R X 1 SCALE	
Red to Eng. Gnd.	00	Any reading indicates a short circuit.
Eng. Gnd. to Red	00	
Red to Black	00	
Black to Red	00	
Black to Eng. Gnd.	00	

(3) Remove high temperature safety switch (TM 5-3895-342-12).

c. Installation. Install the cylinder heads in reverse of instructions in subparagraph a above.



ME3896-342-34/

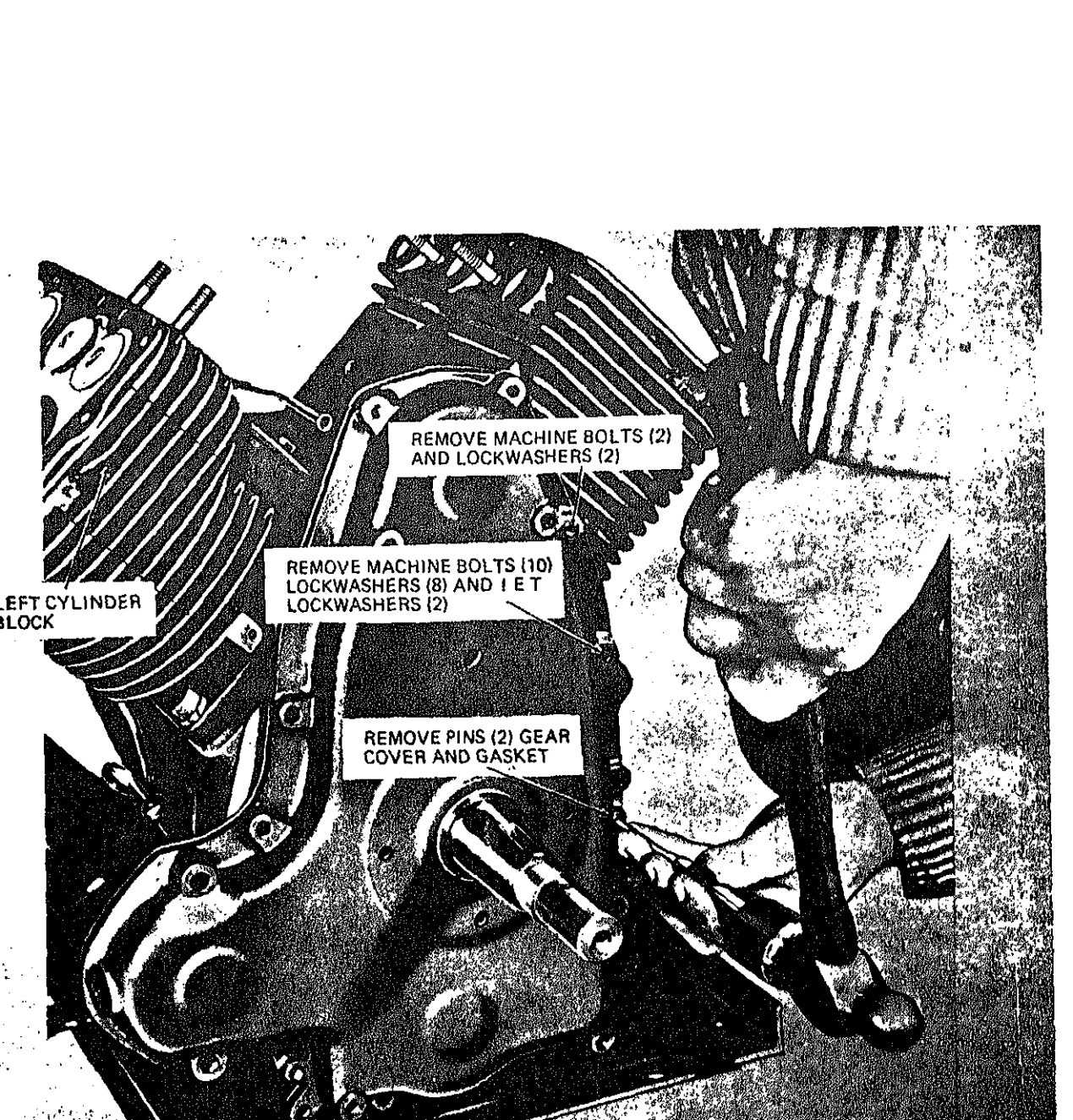
1. Valve Spring Seat Retainer
2. Valve Rotor Cap
3. Valve Spring Seat
4. Valve

5. Spring
6. Valve Guide
7. Valve Seat Insert
8. Cylinder Block

Figure 3-9. Valve assembly, valve insert and valve guide, exploded view.

Note. Tag each part and keep assemblies separated for accurate reinstallation.

Install a new valve seat insert by shrinking the insert with dry ice. Repair or replace excessively worn or damaged parts.



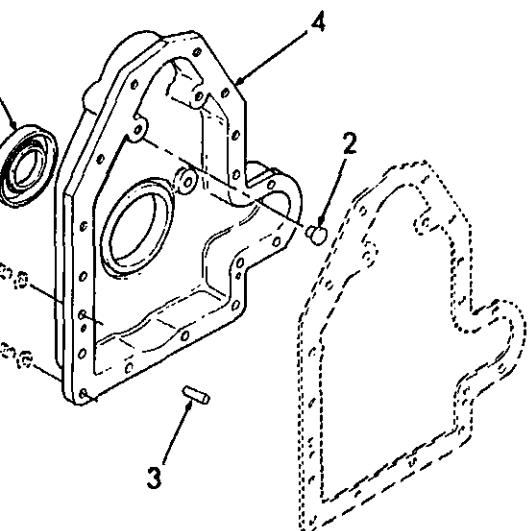
LEFT CYLINDER
BLOCK

REMOVE MACHINE BOLTS (2)
AND LOCKWASHERS (2)

REMOVE MACHINE BOLTS (10)
LOCKWASHERS (8) AND 1 E T
LOCKWASHERS (2)

REMOVE PINS (2) GEAR
COVER AND GASKET

b. **Disassembly.** Disassemble the gear cover in reverse sequence as illustrated in figure 3-11.



ME3895 342-34/3-11

1. Plain incased seal
2. Pin, straight headed
3. Pin, straight headless
4. Gear housing cover

Figure 3-11. Gear cover, exploded view.

c. **Cleaning and Inspection.**

- (1) Clean all parts with cleaning solvent.
- (2) Inspect all parts for wear or damage. Replace worn or damaged parts.

d. **Reassembly.** Reassemble the gear cover in

reverse of the assembly sequence as illustrated in figure 3-11.

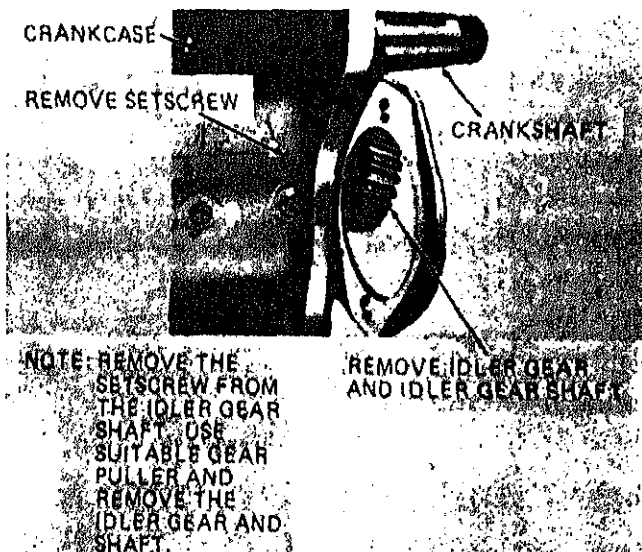
e. **Installation.** Install the gear cover in reverse of the instructions in subparagraph a above.

Note. When re-assembling, tighten capscrews 14 to 18 foot-pounds torque.

3-13. Timing Gears and Gear Cover Spacer.

a. **Removal.**

- (1) Remove the gear cover (para 3-12).
- (2) Remove the setscrew from the crankcase and idler gear shaft, and remove the idler gear and shaft from the crankcase (fig. 3-12).

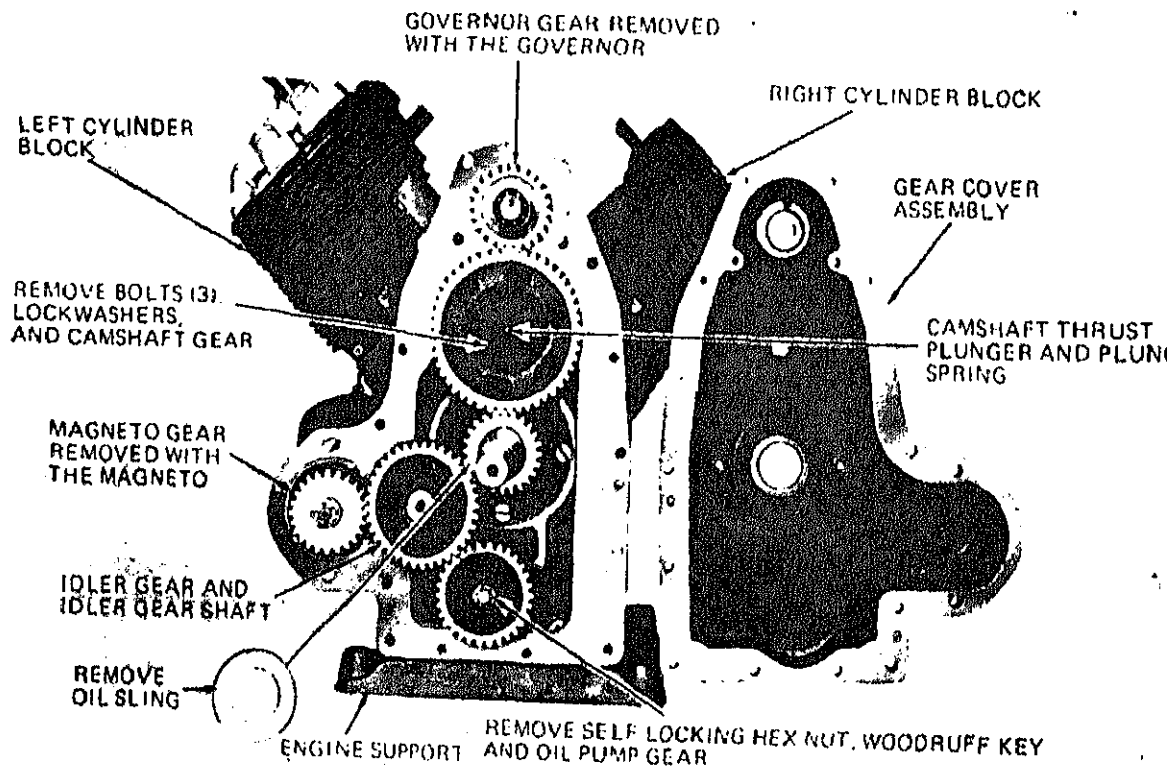


ME3895 342-34/3-12

Figure 3-12. Idler gear and shaft removal.

key from oil pump shaft (fig. 3-13).

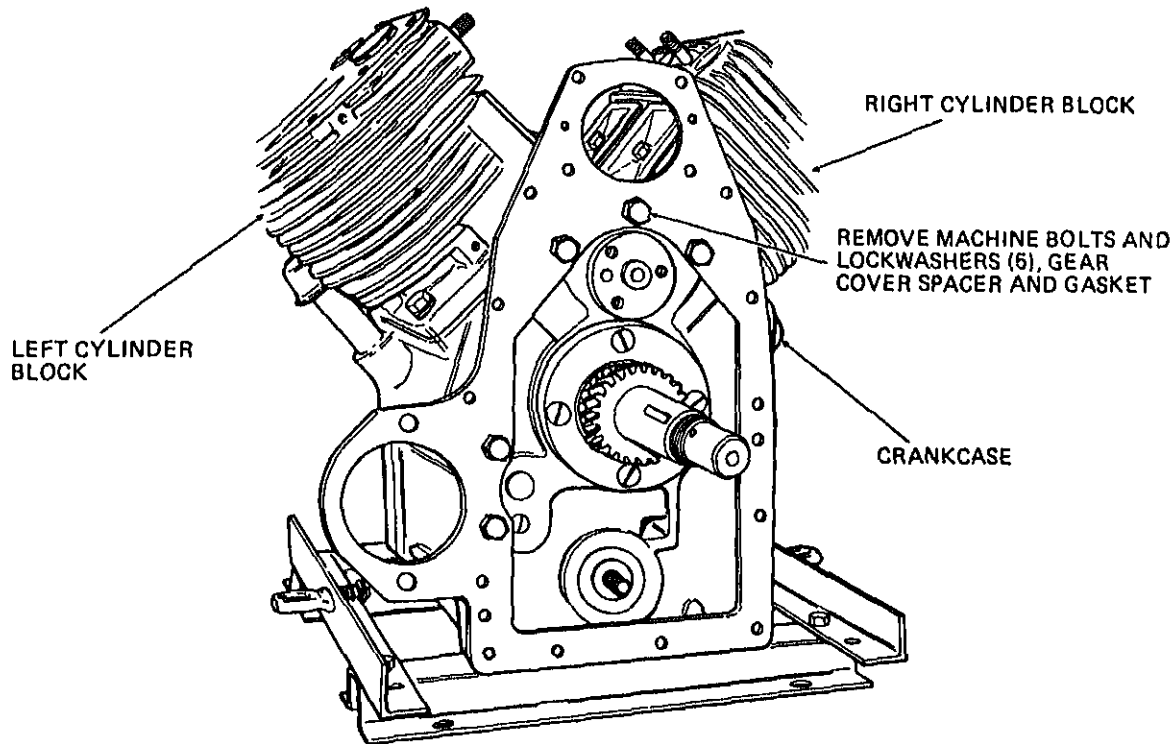
(4) Remove the camshaft thrust plunger spring from the camshaft (fig.



NOTE: USE A SUITABLE GEAR PULLER TO REMOVE GEARS.
NOTE: INSTALL GEARS WITH A SUITABLE PRESS.

Figure 3-13. Idler, camshaft, and oil pump gears removal.

ME3855-511



NOTE: INSTALL WITH NEW GASKET.

ME3895-342-34/3-1

Figure 3-14. Gear cover spacer removal.

b. Cleaning, Inspection and Repair.

- (1) Clean all parts with cleaning solvent.
- (2) Inspect all parts for wear and damage.

Replace worn or damaged parts.

c. Installation. Install the timing gears and gear cover spacer in reverse of instructions in subparagraph a above.

Note. In reassembly, allow .003 inch to .004 inch clearance between idler gear and shaft collar.

3-14. Crankcase Cover Plate, Crankcase Cover Gasket, and Engine Supports

a. Removal.

- (1) Remove engine assembly (para. 2-9).
- (2) Drain engine oil (refer to lubrication order).
- (3) Position the engine assembly in a suitable location to remove the crankcase cover.

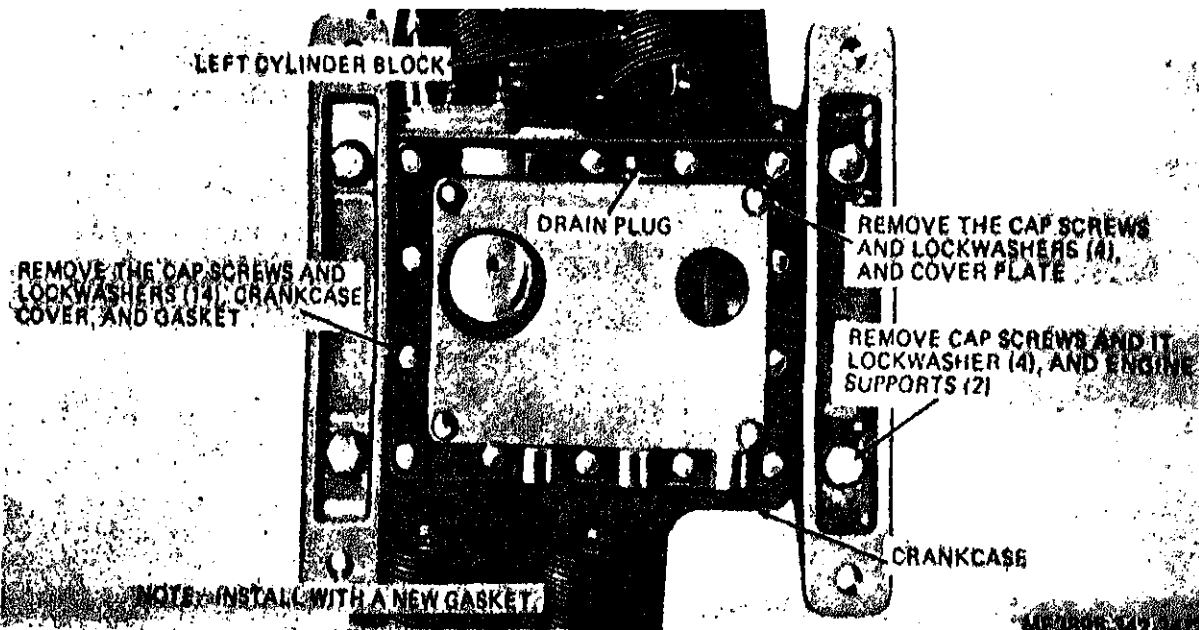


Figure 3-15. Crankcase cover plate, cover, gasket, and engine supports removal.

b. Cleaning, Inspection and Repair.

- (1) Clean all parts with a cleaning solvent.
- (2) Inspect all parts for wear and damage. Repair or replace worn or damaged parts.

c. Installation. Install the crankcase cover plate, crankcase cover, gasket, and engine supports in reverse of the instructions in subparagraph a above.

3-15. Oil Pump

a. Removal.

- (1) Remove engine (para 2-9).
- (2) Remove gear cover (para 3-12).
- (3) Remove the nut, gear and woodruff key from the oil pump shaft (fig. 3-13).
- (4) Remove the crankcase cover plate, crankcase cover, gasket, and engine supports (para 3-14).

- (5) Remove the oil pump from the crankcase

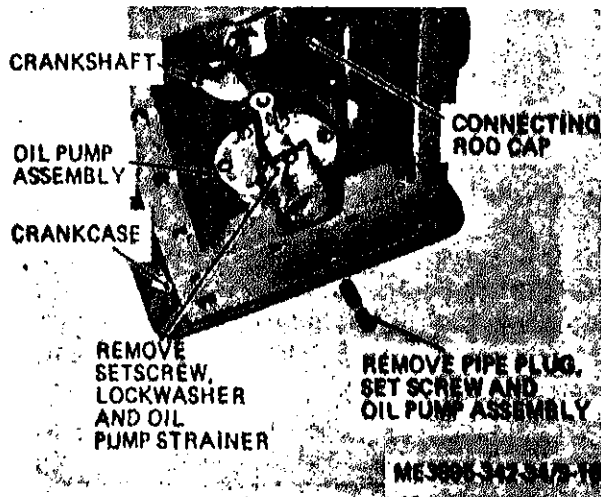
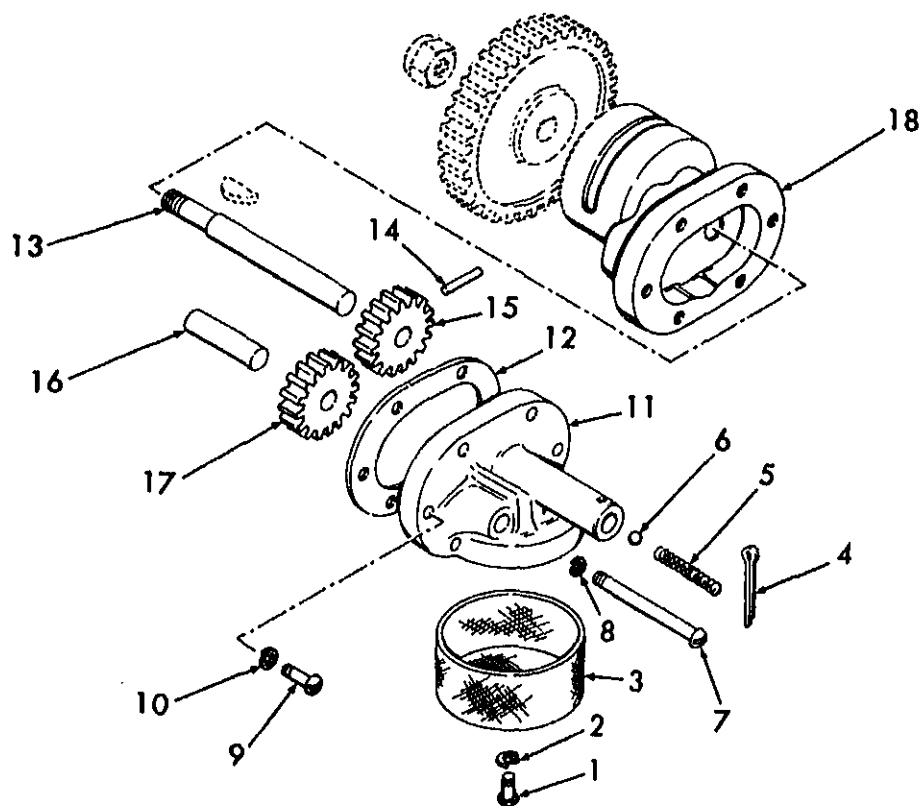


Figure 3-16. Oil pump removal.

numerical sequence as illustrated in figure 3-17.



ME3895-3

1. Screw, Machine, No. 10-32 x 3/8 in.
2. Washer, Lock, No. 10
3. Oil Pump Strainer
4. Pin, Cotter, 1/8 x 1 in.
5. Spring, Helical Compression
6. Ball Bearing, 1/4 dia.
7. Screw, Machine, No. 10-32 x 1/4 in.
8. Washer, Lock, No. 10
9. Screw, Machine, No. 10-32 x 1/2 in.
10. Washer, Lock, No. 10
11. Oil Pump Cover
12. Gasket
13. Oil Pump Shaft
14. Pin, straight headless, 1/8 x 3/4 in.
15. Drive gear
16. Idler gear pin
17. Idler gear
18. Oil pump body

REMOVE CAP SCREWS AND LOCKWASHERS (6) AND BAFFLE PLATES (2)

REMOVE THE STAMPED NUTS AND HEX NUTS (8), BEARING CAPS (4), LOWER BEARINGS HALVES (4) AND UPPER BEARING HALVES (4).

CONNECTING ROD (4)

OIL SPRAY NOZZLE (4)

CRANKSHAFT

NOTE: SIDE CLEARANCE BETWEEN BEARING AND CRANKSHAFT MUST BE WITHIN 0.004 to 0.0016 INCH.

NOTE: TORQUE THE NUTS TO 14 to 18 FOOT POUNDS. LOCK WITH STAMP NUT ONE QUARTER TURN WITH WRENCH BEYOND FINGER TIGHT.

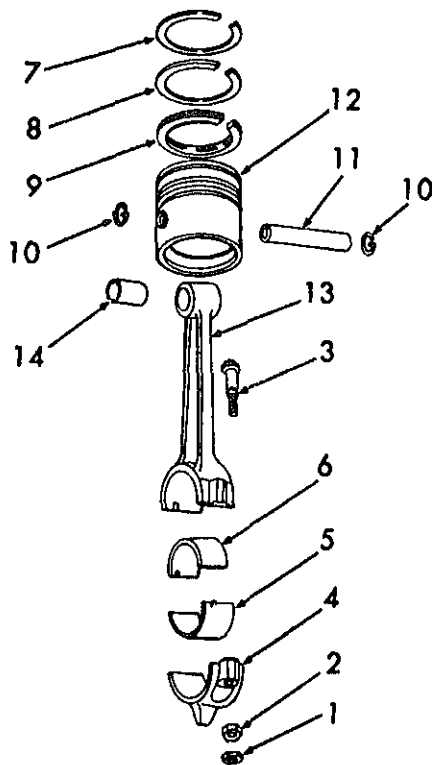
ME3895 342-34/3-18

Figure 3-18. Connecting rod caps and baffle plates removal.

Note. Remove the assembled pistons from the top of the cylinder block.

Note. The connecting rods, bearings, and caps are matched and must be kept in their original position.

b. Disassembly. Disassemble the piston and rod assembly in numerical sequence as illustrated in figure 3-19.



ME3895-342-34/3-19

1. Nut, Stamped, 5 / 16-24
2. Nut, Hex, 5 / 16-24
3. Bolt, Shoulder, 5 / 16-24
4. Cap
5. Lower Half Bearing
6. Upper Half Bearing
7. Compression Ring
8. Scraper Ring
9. Oil Ring
10. Retainer Ring
11. Pin, Piston
12. Piston
13. Connecting Rod
14. Sleeve Bearing

Figure 3-19. Piston assembly, exploded view.

c. Cleaning, Inspection and Repair.

assemblies are put back into the same bore from which they were removed. The piston skirt is cam ground to an elliptical contour. Clearance between the piston and cylinder must be measured at the center of the thrust face of the piston skirt. Refer to table 1-1. The thrust faces on the piston skirt are 90 degrees from the axis of the piston pin hole. When reassembling the piston and connecting rod to the engine, be sure the arrow on the top of the piston is pointing in the direction of crankshaft rotation. (Clockwise when viewing the flywheel end of the engine.) Tighten connecting rod nuts 22 to 24 foot pounds torque.

e. *Installation.* Install the baffle plates and connecting rods and piston assemblies in reverse of instructions in subparagraph a above.

Note. Install pistons in numbers one and three cylinder so that the slits in the piston skirts face the center of the engine. The slits in pistons two and four must face away from the center of the engine.

3-17. Crankshaft Assembly

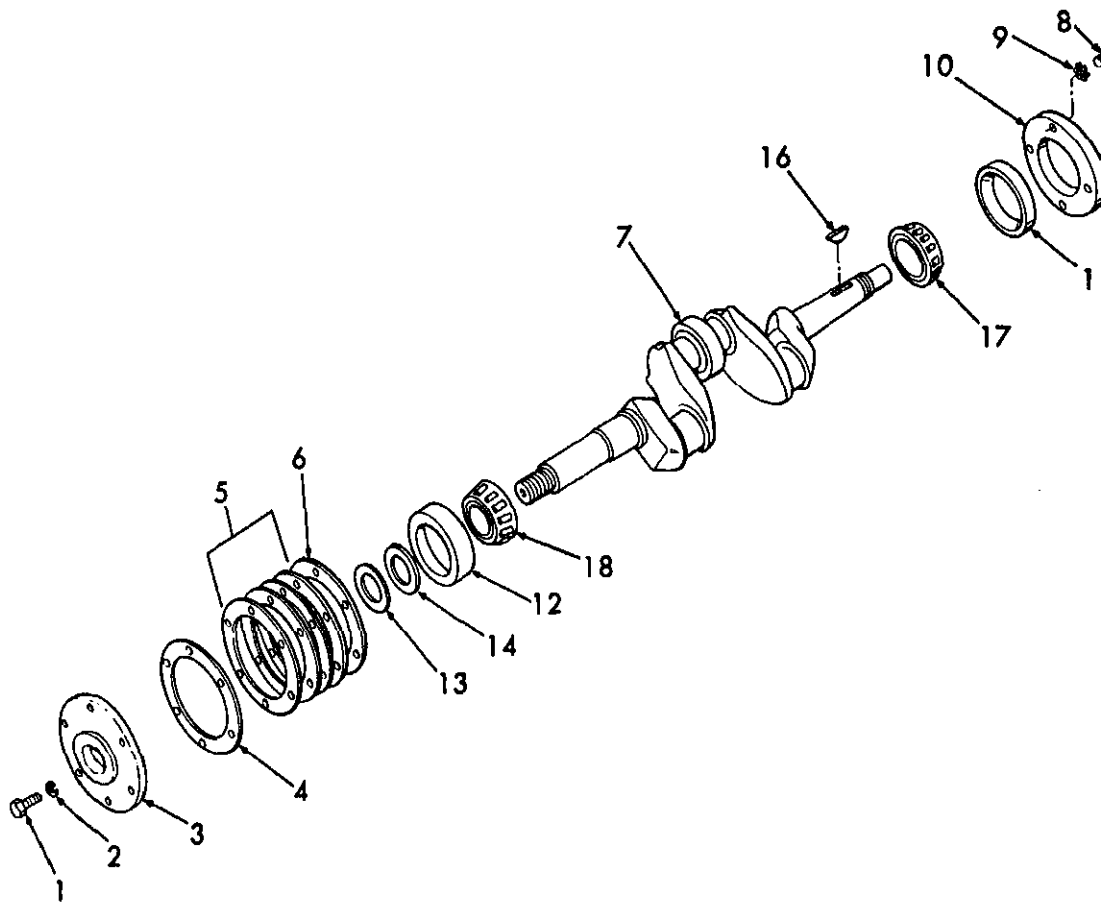
a. Removal.

- (1) Remove engine (para 2-9).
- (2) Remove clutch assembly (para 3-7).
- (3) Remove timing gears and gear cover spacer. (para 3-13).
- (4) Remove baffle plates, and connecting rods and piston assemblies (para 3-16).

(5) Remove the crankshaft assembly from the crankcase in numerical sequence as illustrated in figure 3-20. Be sure to keep shims and gaskets in place as these are required to give the proper end play to the tapered roller main bearings on the crankshaft. The end play should be .002 to .003 inch when engine is cold. There is practically no wear on the bearings so that no readjustment is necessary after proper assembly.

b. Cleaning, Inspection and Repair.

- (1) Clean all parts with cleaning solvent.
- (2) Inspect all parts for wear and damage.



1. Screw, Cap, 3/8-16 x 1-1/4 in.
2. Washer, Lock, 3/8 in.
3. Bearing Plate Retainer
4. Gasket
5. Shims
6. Gasket
7. Crankshaft
8. Screw, Machine, 5/16-18 x 3/4 in.
9. Washer, Lock, 5/16 in.

10. Bearing Retainer Plate
11. Bearing Cup
12. Bearing Cup
13. Retainer, Takeoff End
14. Encased Seal
15. Gear
16. Key, Woodruff, No. 1
17. Bearing Cone
18. Bearing Cone

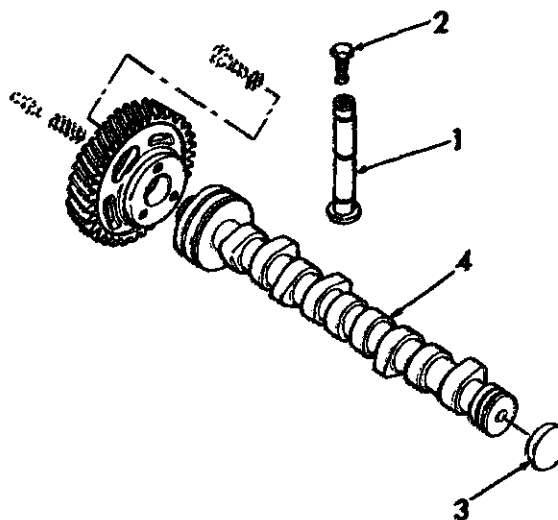
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...of instructions in subparagraphs 1 and 2 above.

Camshaft and Valve Lifters.

Removal.

- 1) Remove the crankshaft assembly (para 3-10).
- 2) Remove the valve assemblies, valve inserts and guides (para 3-11).
- 3) Remove the camshaft assembly and valve lifter assemblies in numerical sequence as stated in figure 3-21.



to fig. 3-21:

Valve Lifter
New, Valve Lifter Adjusting-
Expansion Plugs
Camshaft

ME3895-342-34/3

Figure 3-21. Camshaft and valve lifter assembly, exploded view.

b. Cleaning, Inspection and Repair.

(1) Clean all parts with cleaning solvent.

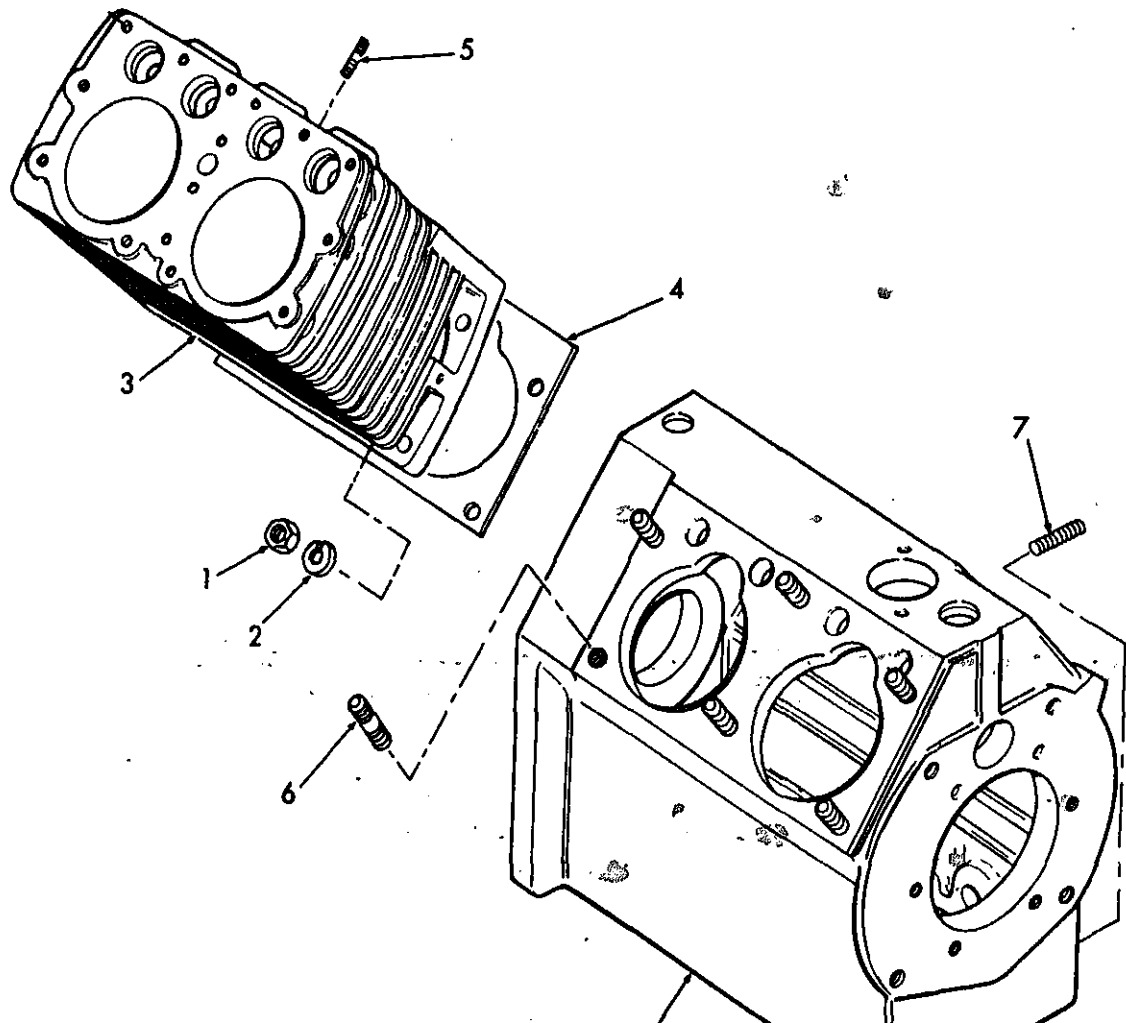
(2) Inspect all parts for wear and damage. Refer to table 1-1 for wear limits and dimensions. Repair or replace worn or damaged parts.

c. *Installation.* Install the camshaft and valve lifters in reverse of instructions in subparagraph a above. When reinstalling, be sure the spring and

(para 3-18).

(2) Remove the cylinder blocks and gaskets from the crankcase in numerical sequence illustrated in figure 3-22.

Note. Tag each cylinder block so that it will be installed on the same side of the crankcase.



studs, oil filter mounting pad studs, spray nozzles, and pipe plugs from the crankcase assembly as illustrated in figure 3-22.

c. Cleaning, Inspection and Repair.

- (1) Clean all parts with cleaning solvent.

Repair or replace worn or damaged parts.

d. Installation. Install the cylinder block crankcase in reverse of instructions in paragraph a above.

Note. Use a new gasket on each cylinder block installing.

CHAPTER 4

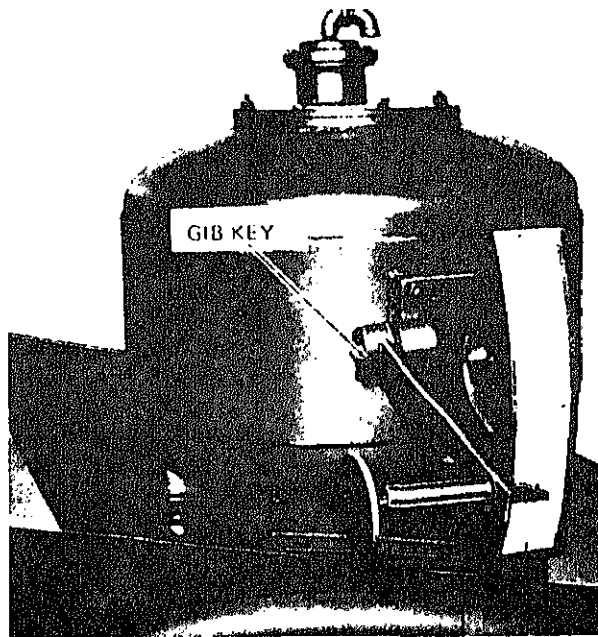
REPAIR OF WATER SYSTEM

4-1. General

The water system consists of an automatic syphon-cut-off type tank and a three-way valve. The amount of water discharged into the drum is predetermined by setting the indicator lever on the water gage. This lever moves the syphon head up or down to regulate the exact amount of mixing water desired.

4-2. Water Gage

a. *Removal.* Remove water gage as instructed in figure 4-1.

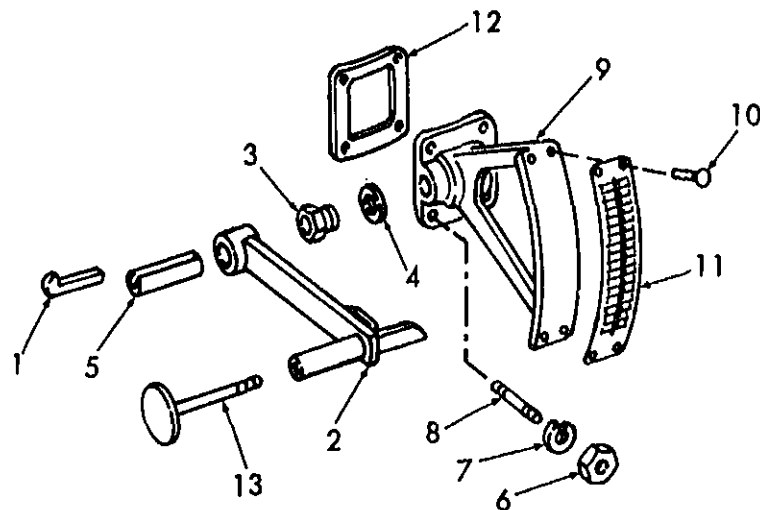


1. REMOVE GIB KEY AND DRIVE OUT SHAFT, AND REMOVE HAND LEVER.
2. REMOVE FOUR NUTS AND LOCKWASHERS AND REMOVE WATER GAGE.

ME3895-342-34/4-1

Figure 4-1. Water gage removal.

numerical sequence as illustrated in figure 4-2.



ME3895-342-34/4-

- | | | |
|----------------|---------------|-----------------------|
| 1. Gib, key | 5. Shaft | 10. Screw, drive |
| 2. Lever, hand | 6. Nut, hex | 11. Gage, water |
| 3. Gland | 7. Lockwasher | 12. Gasket |
| 4. Packing | 8. Stud | 13. Handle, adjusting |
| | 9. Support | |

Figure 4-2. Water gage, exploded view.

c. Cleaning, Inspection and Repair.

(1) Clean all parts with a cleaning solvent.

(2) Inspect all parts for wear and damage.

Replace worn or damaged parts.

d. Reassembly. Reassemble water gage in reverse of numerical sequence as illustrated in figure 4-2.

e. Installation. Install water gage in reverse of instructions in figure 4-1.

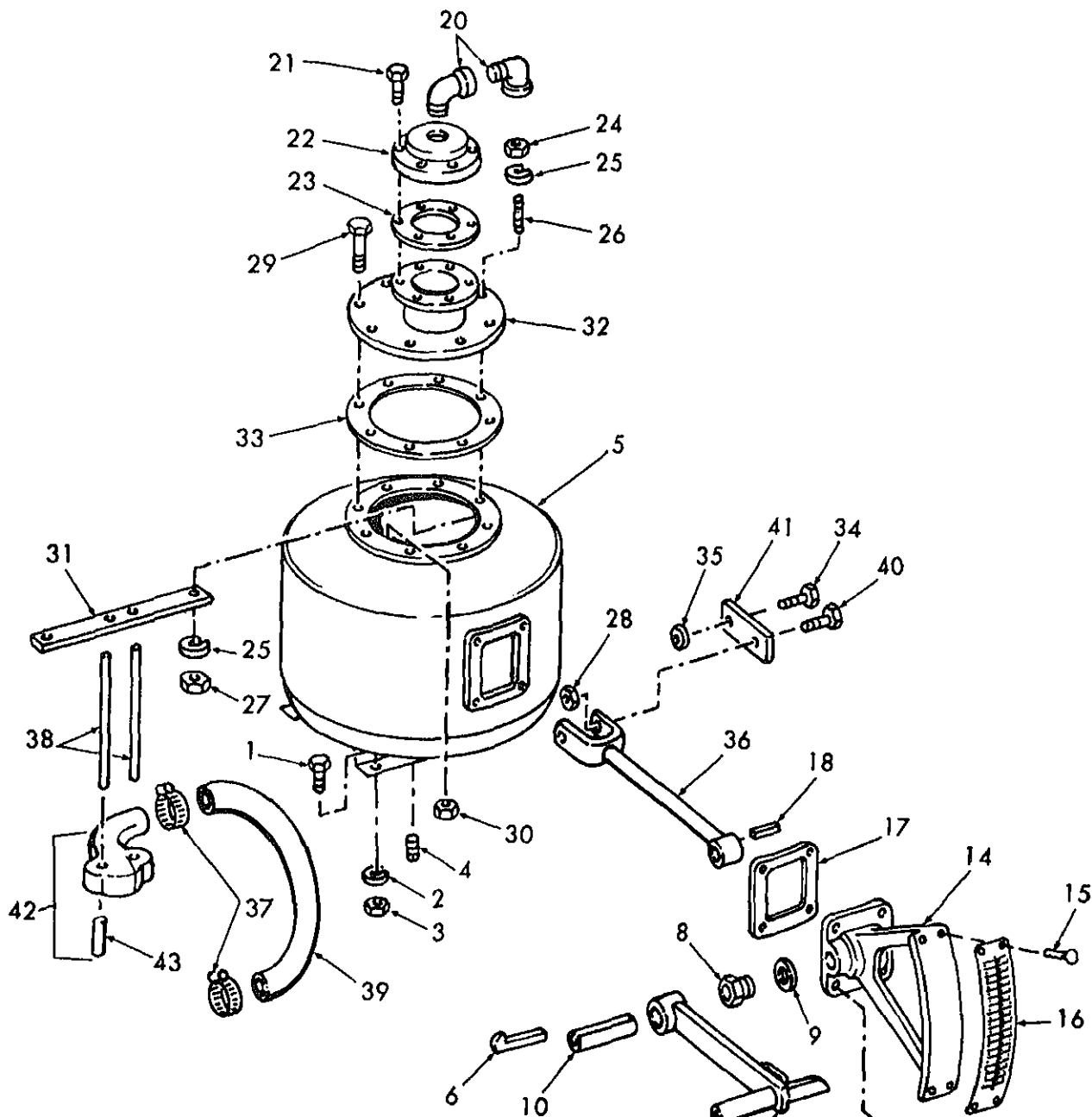
4-3. Water Tank

a. Removal. Remove water tank (para 2-10).

b. Disassembly. Disassemble water tank in numerical sequence as illustrated in figure 4-3.

KEY to fig. 4-3:

- | | |
|------------------------|---------------------|
| 1. Screw, cap hex head | 22. Valve ay |
| 2. Lockwasher 1/2 in. | 23. Gasket |
| 3. Nut, hex | 24. Nut, hex |
| 4. Pipe, plug | 25. Lockwasher 3/8 |
| 5. Syphon, tank | 26. Stud |
| 6. Gib, key | 27. Nut, hex |
| 7. Lever, hand | 28. Nut, hex |
| 8. Gland | 29. Screw, hex head |
| 9. Packing | 30. Nut, hex |
| 10. Shaft | 31. Bar, support |
| 11. Nut, hex | 32. Cover |
| 12. Lockwasher | 33. Gasket |
| 13. Stud | 34. Screw, cap hex |
| 14. Support | 35. Spacer |
| 15. Screw, drive | 36. Lever, fork |
| 16. G | 37. Clamp, hose |
| | 38. B |



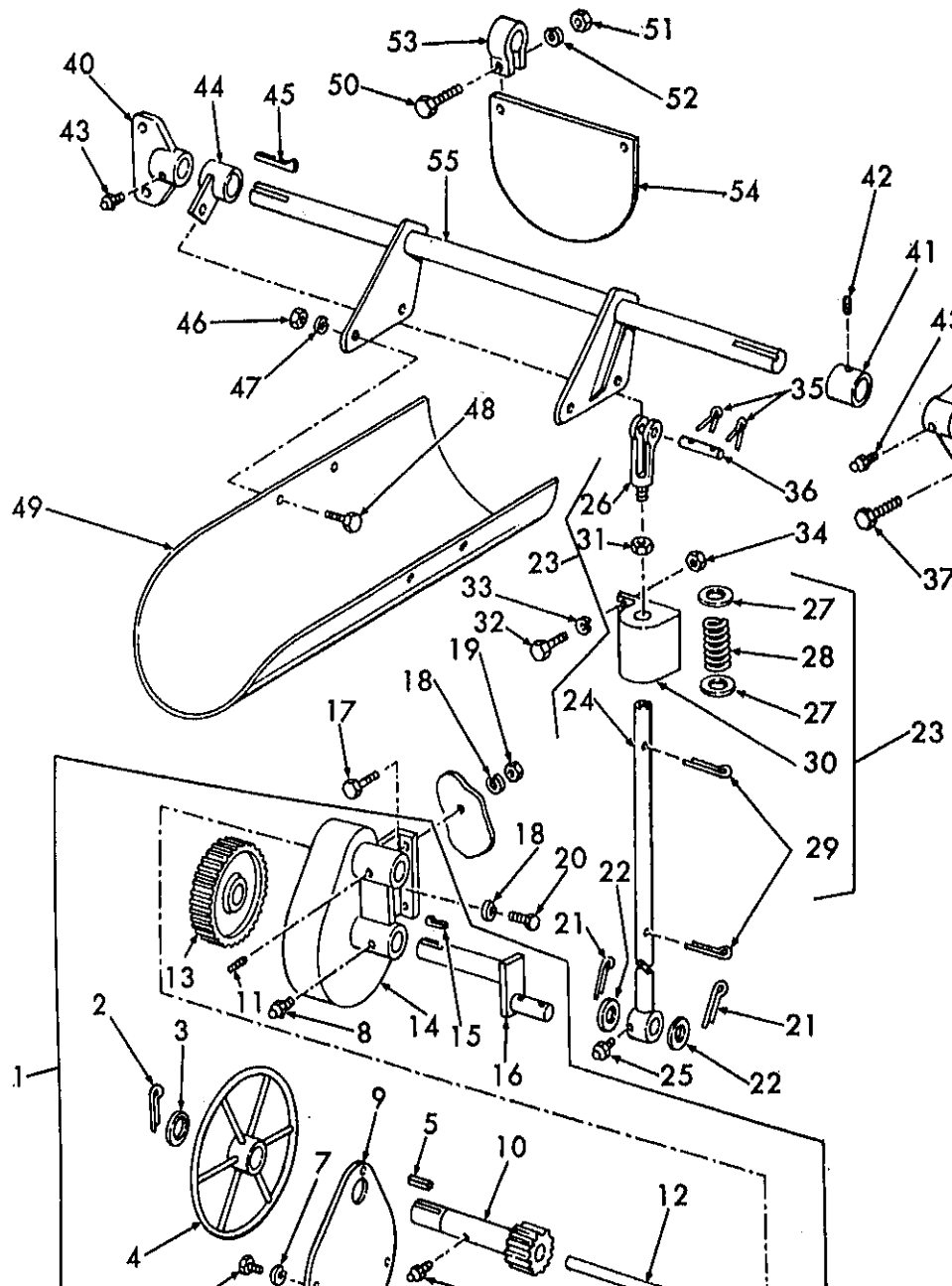
REPAIR OF DISCHARGE SPOUT ASSEMBLY

General
The discharge spout assembly consists of the discharge spout, hand wheel and gear case, and operating linkage. The operating shaft lever is moved to center to lock spout in both the mixing and discharge positions.

5-2. Discharge Spout Assembly

a. *Removal.* Remove discharge spout assembly (para 2-11).

b. *Disassembly.* Disassemble discharge spout assembly in numerical sequence as illustrated in figure 5-1.



1. Crank ay, discharge
2. Pin, cotter
3. Washer, cut
4. Wheel, hand
5. Key
6. Screw, cap hex head
7. Lockwasher
8. Fitting, grease
9. Cover
0. Shaft pinion discharge
1. Screw, set soc hd
2. Shaft, pinion
3. Gear, Boston
4. Gear Case
5. Key, Gib
6. Crank
7. Bolt, mach hex hd
8. Lockwasher
9. Nut, hex
0. Screw, hex head
1. Pin, Cotter
2. Washer
3. Snubber Subassembly
4. Rod, Connecting
5. Fitting, grease
6. Yoke end
7. Washer, cut

28. Spring
29. Pin, cotter
30. Box, snubber
31. Nut, hex
32. Bolt, mach hex head
33. Lockwasher
34. Nut, hex
35. Pin, Cotter
36. Pin
37. Bolt, mach hex head
38. Nut, hex
39. Lockwasher
40. Bearing
41. Collar, Set
42. Screw, Set Soc Hd
43. Fitting, grease
44. Lever
45. Key, Gib
46. Nut, hex
47. Lockwasher
48. Bolt, mach hex hd
49. Chute, discharge
50. Bolt, mach hex hd
51. Nut, hex
52. Lockwasher
53. Clamps
54. Guard, splash
55. Shaft

(1) Clean all parts with cleaning solvent.

(2) Inspect all parts for wear and damage. Repair or replace worn and damaged parts.

d. Reassembly. Reassemble discharge spout assembly in reverse of numerical sequence as illustrated in figure 5-1.

e. Installation. Install discharge spout assembly (para 2-11).

REPAIR OF SKIP, SKIP VIBRATOR ASSEMBLY, AND SKIP HOIST ASSEMBLY

Section I. SKIP, AND SKIP VIBRATOR ASSEMBLY

6-1. General

The closed end skip with arched cover plate elevates to 49 degrees in 7 seconds. The cam and lever type skip vibrator is enclosed in an oil tight case. The skip vibrator operates with a frequency of 1100 pulsations per minute.

6-2. Skip

- a. *Removal.* Remove skip (para 2-2).
- b. *Cleaning, Inspection and Repair.*

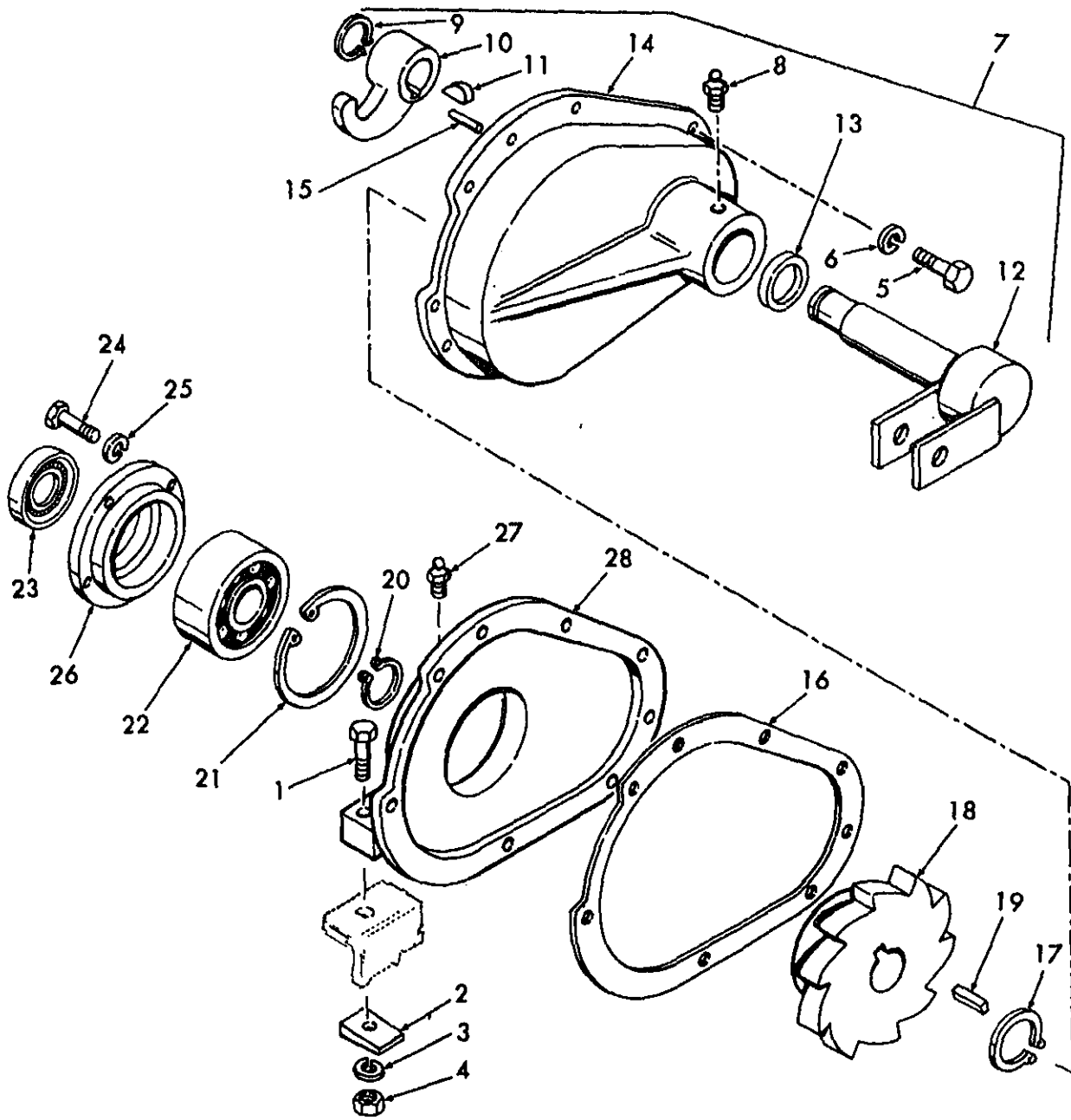
(1) Clean the skip thoroughly with water and a stiff bristled brush.

(2) Inspect the skip for wear and Repair or replace excessively worn or skip.

- c. *Installation.* Install the skip (para

6-3. Skip Vibrator Assembly

- a. *Removal.* Remove skip vibrator (para 2-3).
- b. *Disassembly.* Disassemble skip assembly in numerical sequence as illustrated in figure 6-1.



c. Cleaning, Inspection and Repair.

- (1) Clean all parts with cleaning solvent.
- (2) Inspect all parts for wear and damage. Repair or replace worn and damaged parts.
- d. Reassembly.** Reassemble the skip vibrator assembly in reverse of numerical sequence as illustrated in figure 6-1.
- e. Installation.** Install skip vibrator assembly (para 2-13).

f. Skip Cable

a. Removal.

- (1) Lower skip to the ground.
- (2) Remove gib key from outer end of left-hand winding drum, pull cable off winding drum as far as possible, then remove capscrew, lock-washer and cut washer securing cable to winding drum.

(3) Remove gib key from reduction pulley, and unwind cable from reduction pulley far enough to permit sliding pulley off of shaft and placing pulley out of the way on top of mixer.

(4) Remove gib key from right-hand winding drum, pull skip cable off drum as far as possible and then remove capscrew, lockwasher and cut washer securing cable to drum.

b. Cleaning, Inspection and Repair.

- (1) Clean cable with cleaning solvent.
- (2) Inspect cable for wear and damage. Replace excessively worn or damaged cable.
- c. Installation.** Install skip cable in reverse of instructions in subparagraph a above.

Section II. SKIP HOIST ASSEMBLY

5. General.

The skip hoist assembly consists of a reduction pulley, left-hand and right-hand winding drums, shaft, and cable.

f. Reduction Pulley, Winding Drums, Bearings and Shaft

a. Removal.

- (1) Remove skip cable (para 6-4).
- (2) Slide left and right-hand winding drums off shaft.
- (3) Unwind cable from reduction pulley as far

as possible, then remove two capscrews and lockwashers securing cable to reduction pulley.

(4) Drive out shaft, remove two bolts and lockwashers from each bearing plate and remove bearings.

b. Cleaning, Inspection and Repair.

- (1) Clean all parts with a cleaning solvent.
- (2) Inspect all parts for wear and damage. Repair or replace worn and damaged parts.
- c. Installation.** Install reduction pulley, winding drums, bearings and shaft in reverse of instructions in subparagraph a above.

7-1. General

The drive and hoist assembly consists of the drive sheave, gear reduction case assembly, clutch band, brake band, and hoisting drum.

7-2. Drive Sheave

a. Removal.

(1) Remove pump belt (1) and hoist drive belts (4) (TM 5-3895-342-12).

(2) Remove the three capscrews securing the drive sheave to the gear reduction case, and slide the drive sheave off of the shaft.

b. Cleaning, Inspection and Repair.

(1) Clean drive sheave with cleaning solvent.

(2) Inspect sheave for wear and damage. Repair or replace worn or damaged sheave.

c. *Installation.* Install drive sheave in reverse of instructions in subparagraph a above.

7-3. Brake Band

a. Removal.

(1) Disconnect brake linkage from brake band by removing cotter pin from brake rod and disengaging rod from linkage.

(2) Remove nut from brake rod holding brake band to lower frame and remove brake band.

b. Cleaning, Inspection and Repair.

(1) Clean brake band.

(2) Inspect brake band for wear and damage. Replace worn or damaged brake band.

c. *Installation.* Install brake band in reverse of instructions in subparagraph a above.

7-4. Clutch Band

a. Removal.

(1) Loosen tension screw on clutch band until clutch band is loose on drum.

(2) Remove cotter pin holding tension screw to clutch band, remove screw and remove clutch band.

b. Cleaning, Inspection and Repair.

(1) Clean clutch band.

(2) Inspect clutch band for wear and damage. Replace worn or damaged clutch band.

c. *Installation.* Install clutch band in reverse of instructions in subparagraph a above.

7-5. Hoisting Drum

a. Removal.

(1) Remove drive and hoist assembly (paragraph 14).

(2) Remove setscrew securing hoisting drum to shaft and remove hoisting drum.

b. Cleaning, Inspection and Repair.

(1) Clean hoisting drum with cleaning solvent.

(2) Inspect hoisting drum for wear and damage. Replace worn or damaged hoisting drum.

c. *Installation.* Install hoisting drum in reverse of instructions in subparagraph a above.

7-6. Gear Reduction Case Assembly

a. Removal.

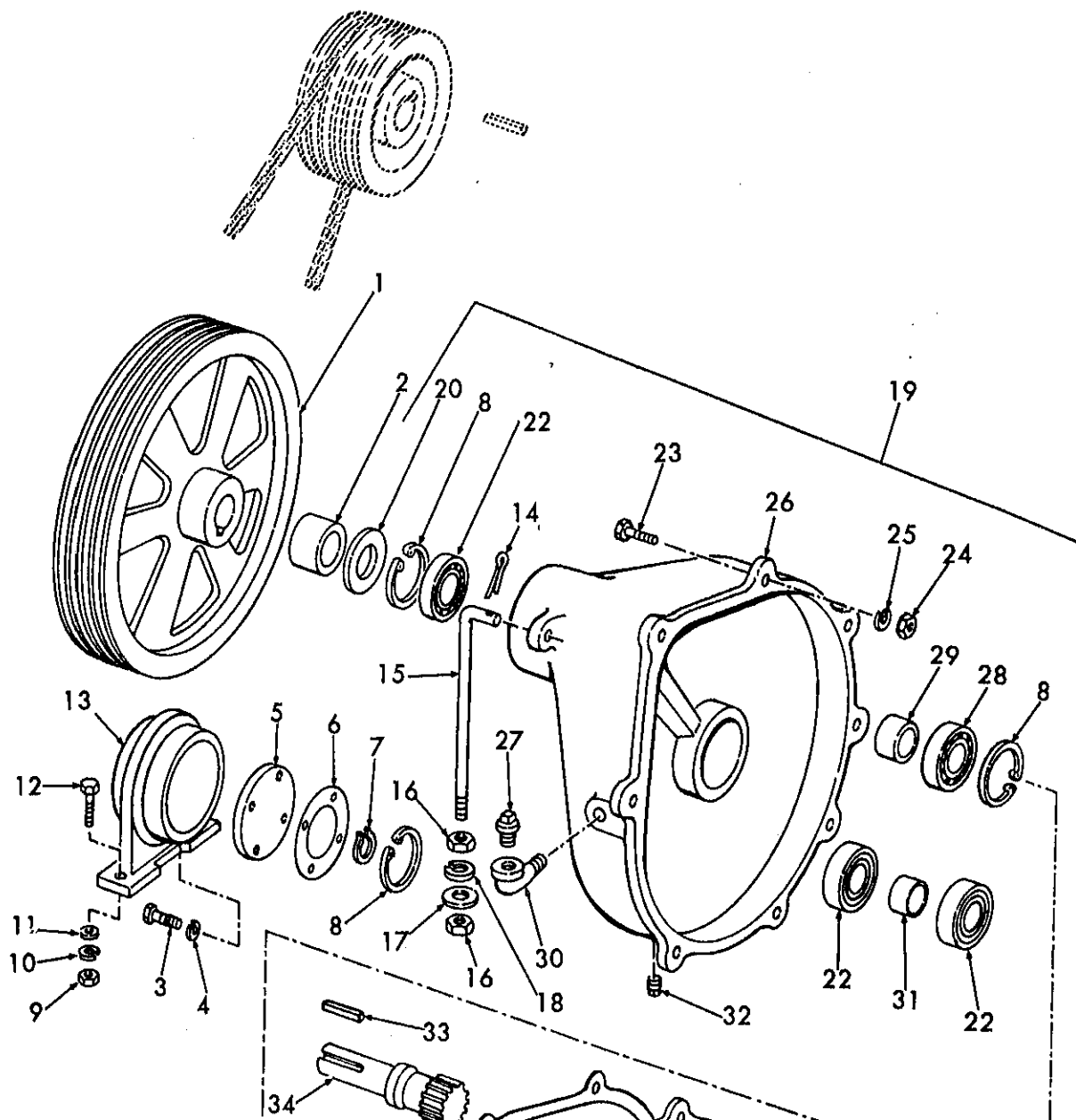
(1) Remove drive and hoist assembly (paragraph 14).

(2) Remove drive sheave (para 7-2).

(3) Remove cotter pin securing tension rod to gear case and remove tension rod.

(4) Remove plug on side of gear case and drain lubricant from gear case assembly.

b. *Disassembly.* Disassemble gear reduction case assembly in numerical sequence as illustrated in figure 7-1.



c. Cleaning, Inspection and Repair.

- (1) Clean all parts with cleaning solvent.
 - (2) Inspect all parts for wear and damage. Replace worn or damaged parts.
- d. Reassembly.** Reassemble gear reduction case

assembly in reverse of numerical sequence as illustrated in figure 7-1.

e. Installation. Install gear reduction case assembly in reverse of instructions in subparagraph **a** above.

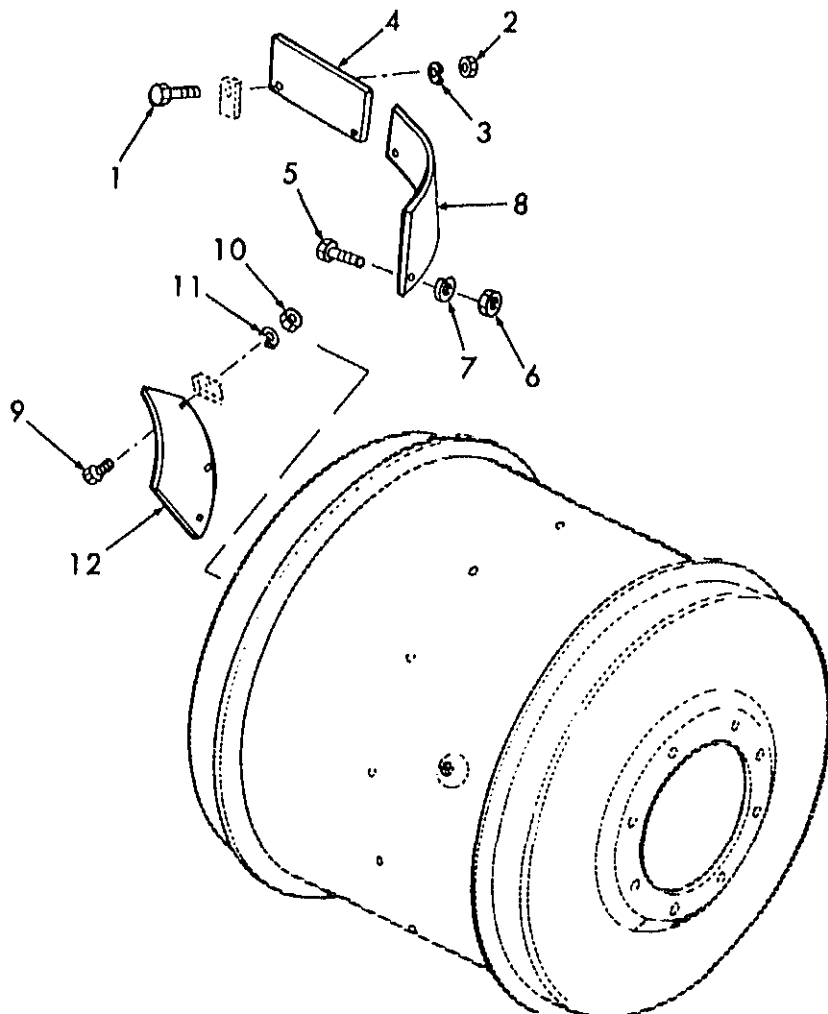
REPAIR OF DRUM, AND ROLLER ASSEMBLY

8-1. General

The drum and roller assembly consists of the drum, drum ring, drum plates, drum rollers and shaft.

8-2. Drum Plates

a. *Removal.* Remove drum plates in numerical sequence as illustrated in figure 8-1.

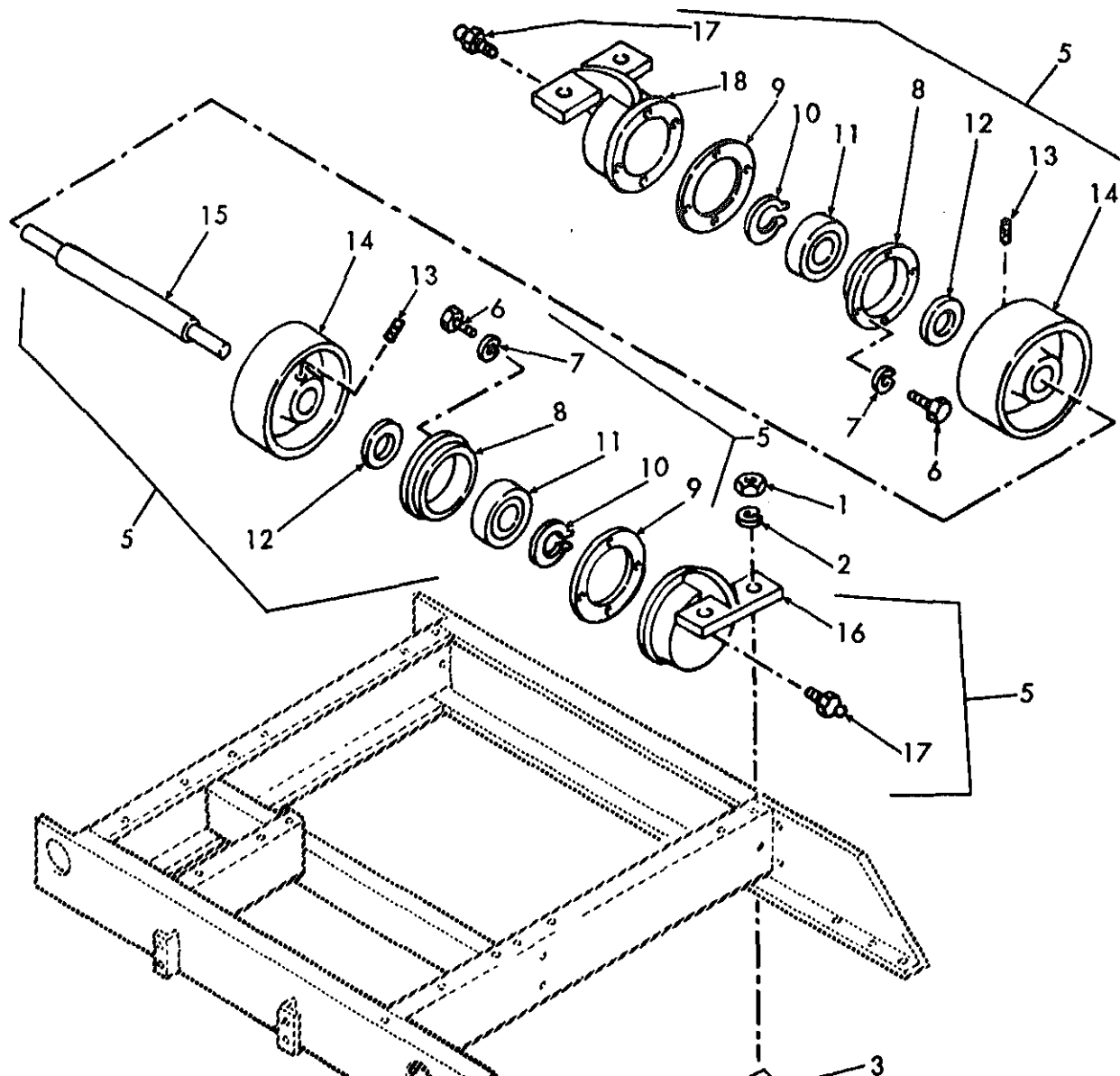


(2) Inspect drum plates for wear and damage. Repair or replace worn or damaged drum plates.

c. *Installation.* Install the drum plates in reverse of numerical sequence as illustrated in figure 8-1.

and raise drum just enough to free drum rollers from drum weight.

(2) Remove drum rollers and shaft in numerical sequence as illustrated in figure 8-2.



(1) Clean and inspect all parts.
(2) Inspect all parts for wear and damage.
Replace worn or damaged parts.
c. Installation. Install drum rollers and shaft in reverse of numerical sequence as illustrated in figure 8-2.

4. Drum Ring Gear

a. Removal.

washers holding ring gear in place on drum.

(3) Use cutting torch to remove ring gear.

b. Installation. Replacement ring gear is supplied in half sections. Install new ring gear onto drum using bolts and washers removed from old ring gear.

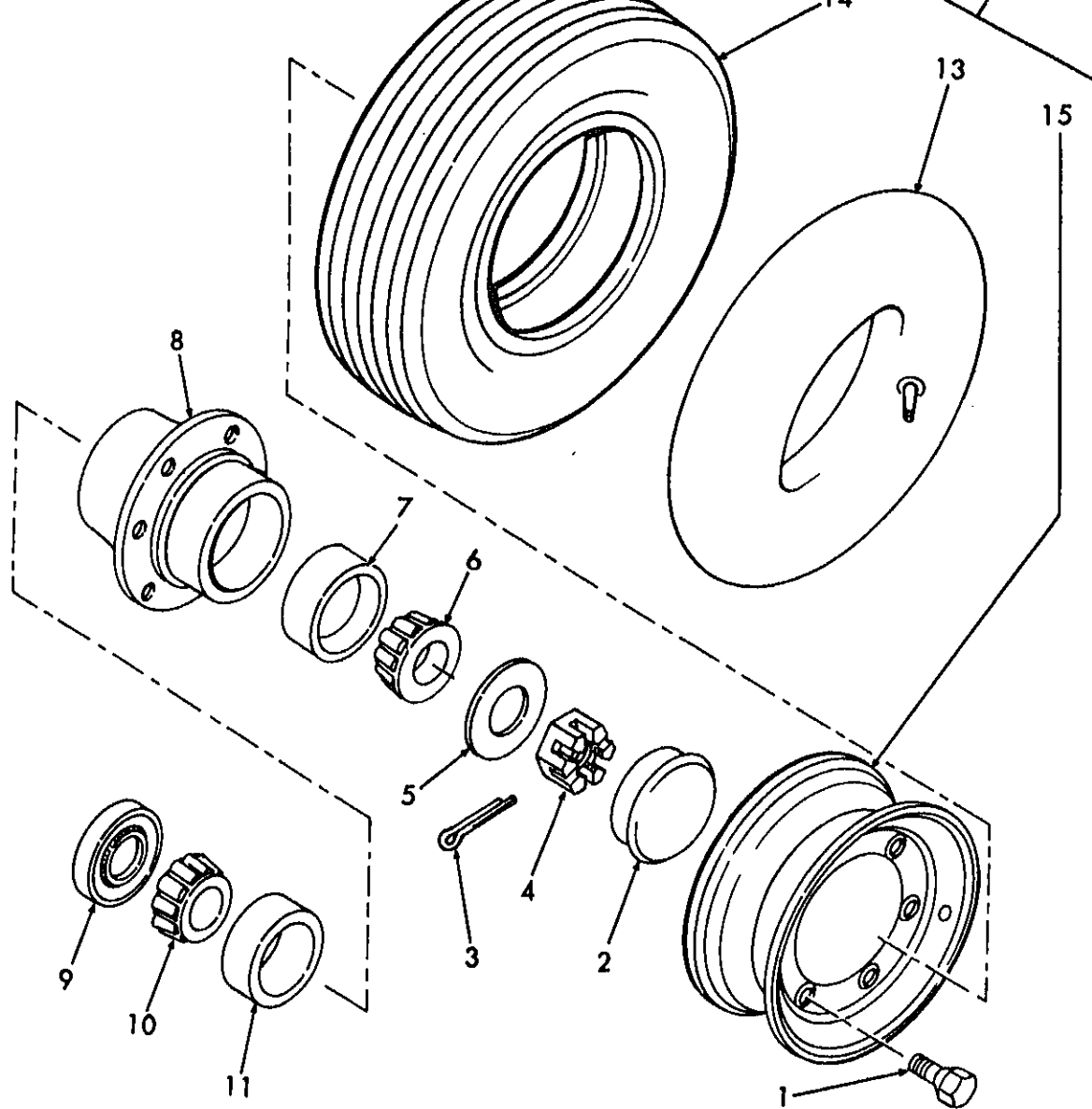
REPAIR OF UNDER CARRIAGE ASSEMBLY

General

Under carriage assembly consists of the wheel
hubs, towing stub, fifth wheel and radius
steering knuckles and axles.

9-2. Wheel Assembly

a. *Removal.* Remove wheel assembly in
numerical sequence as illustrated in figure 9-1.



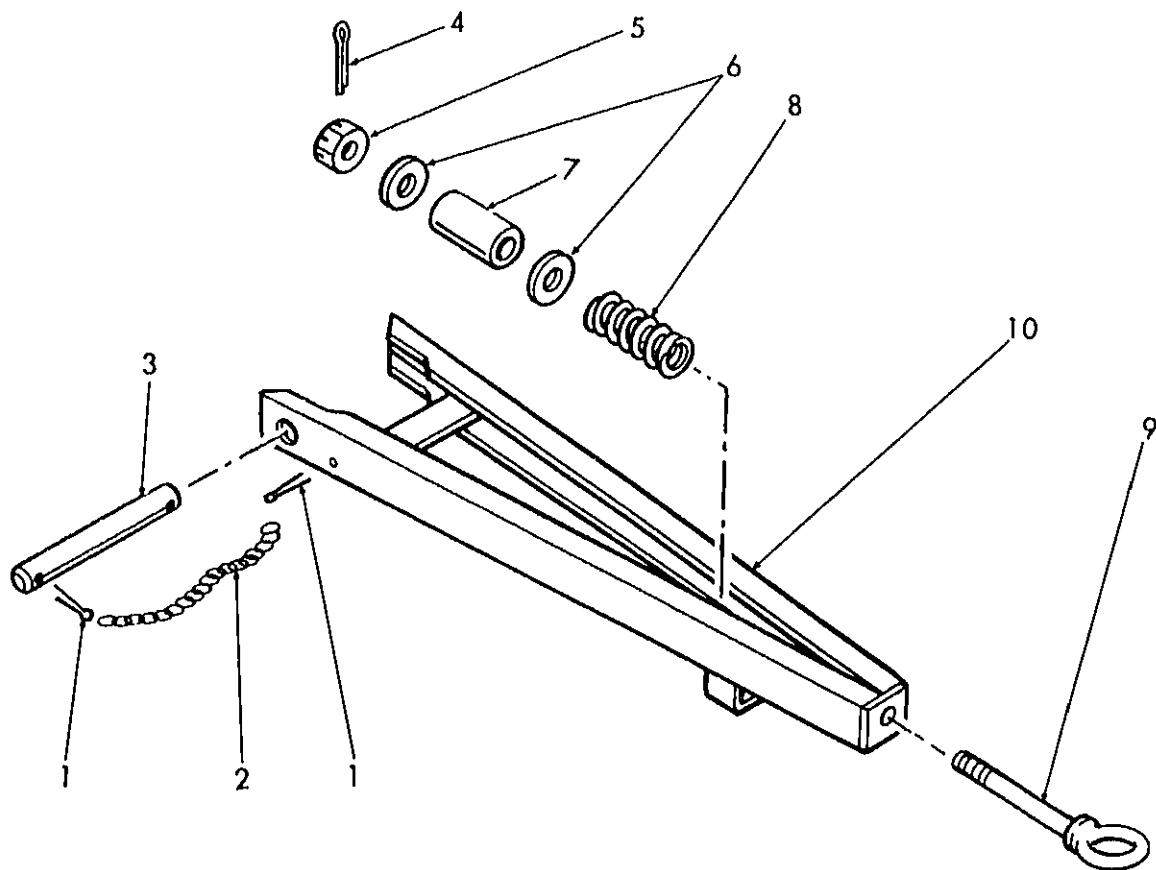
ME3895-342-34/9-1

1. Bolt

6. Bearing, cone

11. Cup, bearing

sequence as illustrated in figure 9-2.



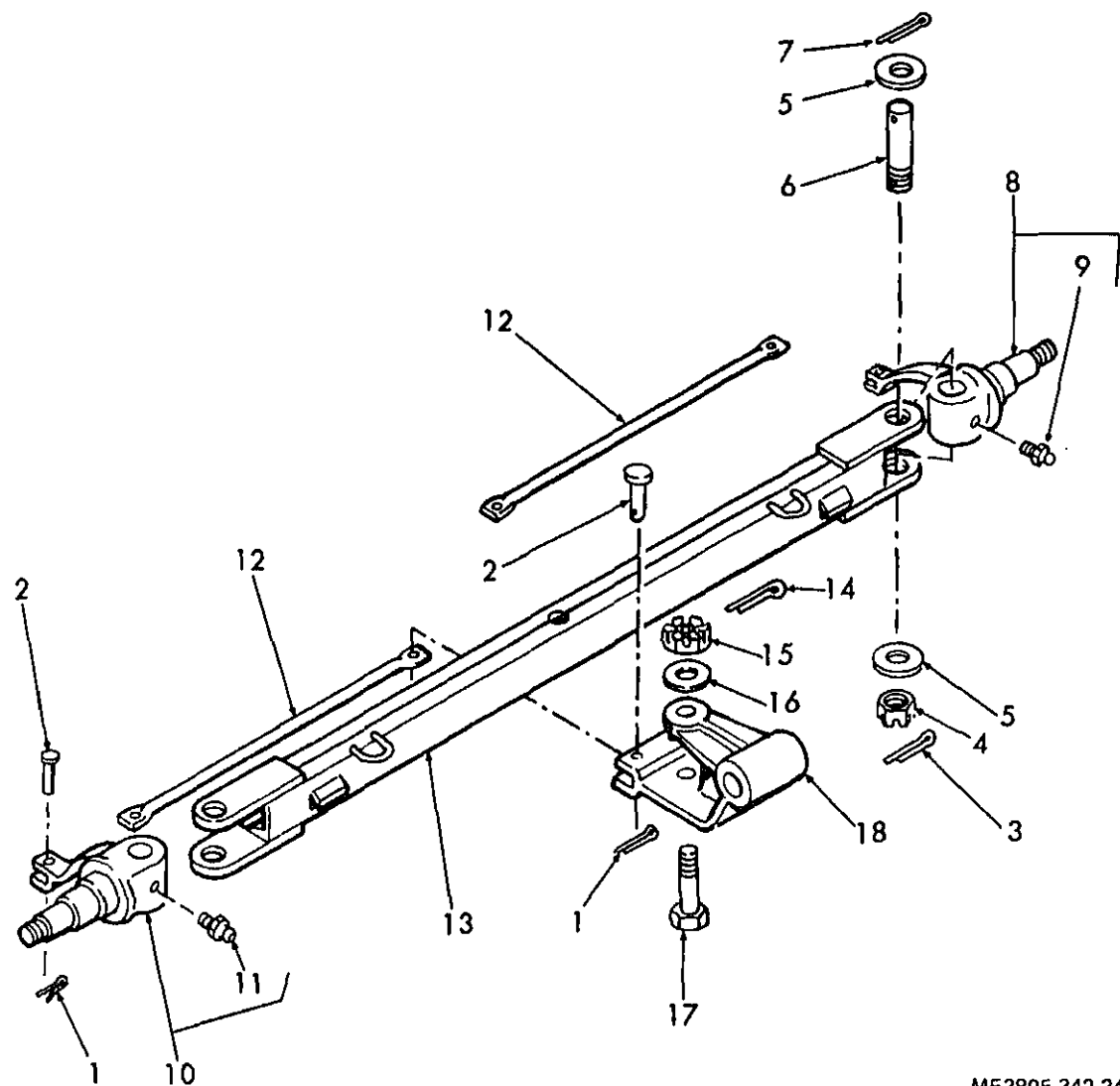
ME3895-342-34/9.

- | | |
|----------------------|--------------------------|
| 1. Pin, cotter | 6. Washer |
| 2. Chain, jack | 7. Spacer |
| 3. Pin, hauling stub | 8. Spring |
| 4. Pin, cotter | 9. End, hauling stub |
| 5. Nut, slotted hex | 10. Stub, hauling sub-ay |

Figure 9-2. Towing stub, exploded view.

b. Cleaning, Inspection and Repair.

9-4. Fifth Wheel Radius Rods and Steer



ME3895-342-34/9-3

1. Pin, cotter
2. Pin, corn picker
3. Pin, cotter
4. Nut, slotted hex

7. Pin, cotter
8. Knuckle: RH
9. Fitting, grease
10. Knuckle: LH

13. Axle, front
14. Pin, cotter
15. Nut, slotted
16. Washer, flat

REFERENCES

A-1. Fire Protection

TB 5-4200-200-10

Hand Portable Fire Extinguishers Approved For
Army Users

A-2. Lubrication

C9100-IL

Identification List For Fuels, Lubricants, Oils and
Waxes

LO 5-3895-342-12

Lubrication Order

A-3. Painting

TM 9-213

Painting Instructions For Field Use

A-4. Radio Suppression

TM 11-483

Radio Interference Suppression

A-5. Maintenance

TM 9-1870-1

TM 38-750

TM 5-3895-342-12

TM 5-3895-342-20P

Care and Maintenance of Pneumatic Tires
The Army Maintenance Management System
Operator and Organizational Maintenance Manual
Organizational Maintenance Repair Parts and
Special Tools List

TM 5-3895-342-34

Direct Support and General Support Maintenance
Manual

TM 5-3895-342-34P

Direct Support, General Support, and Depot
Maintenance Repair Parts and Special Tools List

TM 9-6140-200-15

Operation and Organizational, Field and Depot
Maintenance: Storage Batteries, Lead Acid Type

A-6. Shipment and Storage

TB 740-97-2

Preservation of USAMEC Mechanical Equipment
for Shipment and Storage

TM 740-90-1

Administrative Storage of Equipment

A-7. Destruction to Prevent Enemy Use

TM 750-244-3

Procedures for Destruction of Equipment to
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